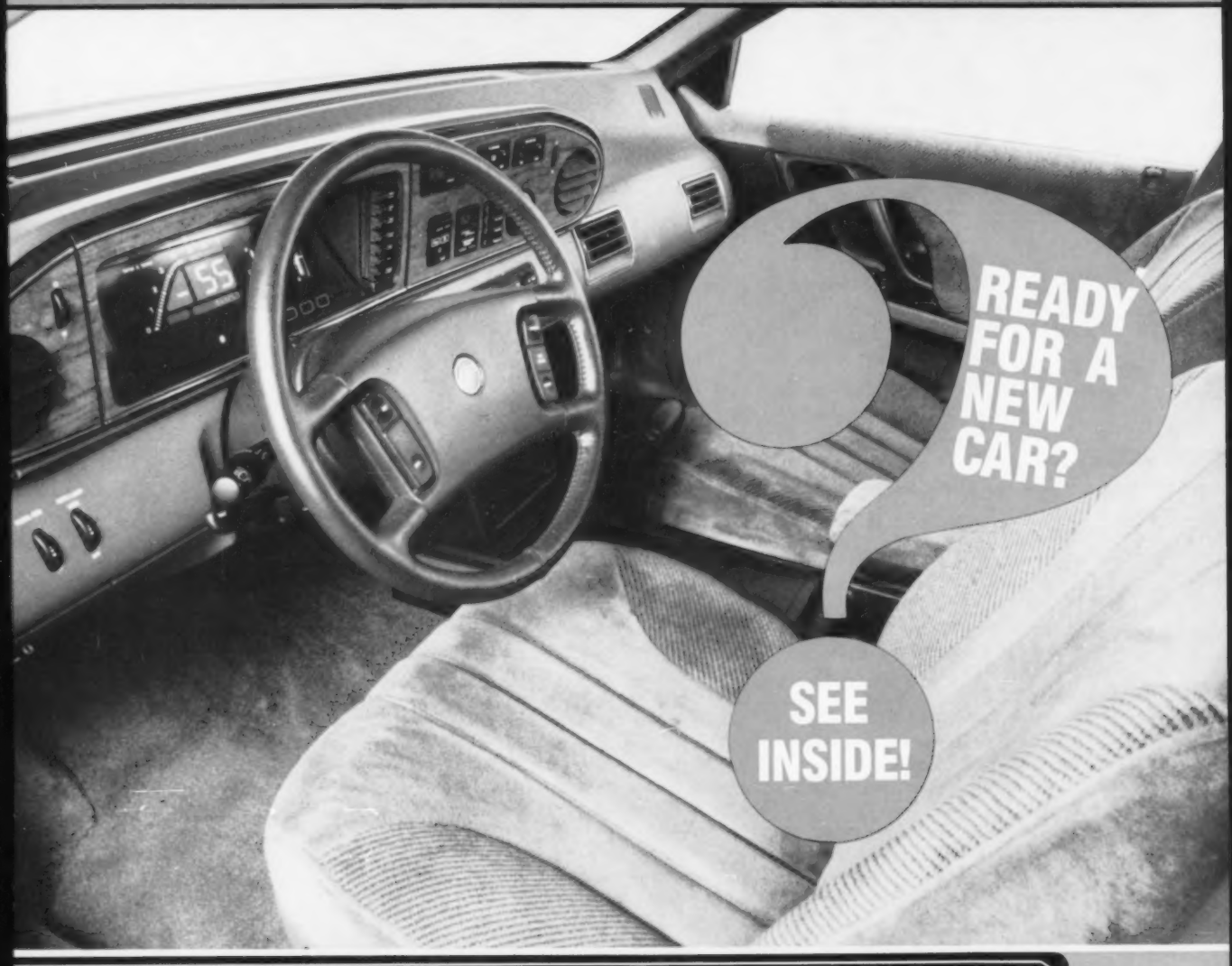
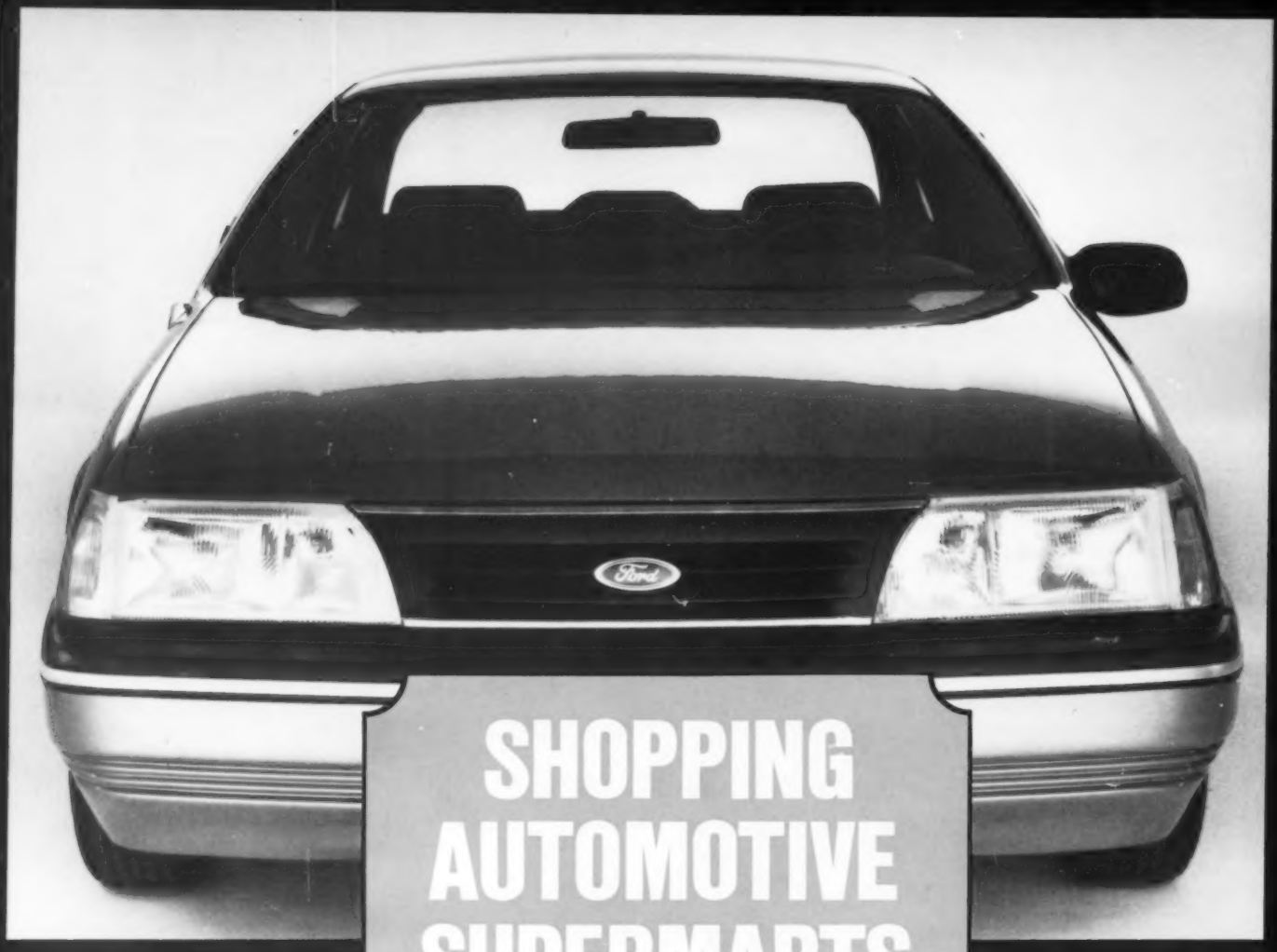
DRIVER

How Do You Test Drive NEW CARS?

MARCH 1986



50 State Motorcycle Requirement UPDATE



SHOPPING AUTOMOTIVE SUPERMARTS

You've done everything to the best of your ability — including following the Backyard Mechanic faithfully — and made the old car last as long as possible. Now it's time for a new automobile. Even that long awaited promotion has come through and you think you just might be able to swing the inflated payments.

Of course, purchasing a new automobile is a major financial commitment. In order to get the most out of it, your selection should be based on careful research.

It's no longer good enough to know that you want a Chevy or Ford or Dodge or what-have-you. In today's automotive supermarkets you have to have a shopping list or you could end up paying more than you can afford for a car that you don't want.

Today's new cars are better all-around values than those of 20 years ago, says the Automotive Information Council (AIC). They are stronger, safer and more fuel efficient, and take about the same percentage of your annual income to buy.

Although new-car prices are high, they actually have never been lower when related to the median family income.

"Oh come on now!"

Curt, what are you doing? How did you get into the word processing system? And what are you doing putting words into this article? Aren't your contributions limited to *DRIVER* trivia quizzes?

"That's Mr. Testy to you. And I'm here to keep you from pulling the wool over the reader's eyes. There's no way that cars cost less today than they did 20 years ago!"

Nobody said they actually cost less. What was said was that car shoppers should compare the cost of a new car to their incomes of today versus those in past years. If they do this then they might well conclude that a new car is a good buy.

For example, in 1950 the price of an average new car was $2,334 and the median family earned $3,319. That put a car purchase into the class of a luxury on the basis of percentage of income. In 1960 the typical car was priced at $2,920 and the income was $5,620.

Thus, in 1950 a new car purchase took 70 percent of the income. In 1960 the median family spent slightly more than 50 percent of its annual income to buy a new car. By 1970 the percentage had dropped to 38.

The average 1984 car sold for $11,274, which included normal options, taxes and license, but excluded financing. That represented about 35 percent of the annual income.

Additionally, car prices in recent years also reflect convenience items such as air conditioning, power steering, power brakes, automatic transmissions, AM-FM radios and other features not generally found on cars in the earlier years.

Today's car prices also include about $1,865 in federally required emissions controls and safety items.

"I still don't believe it!"

You can believe what you want, Cur — Mr. Testy. But let me continue. And if you have anything to add, just jump right in.

"I will."

I know.

Where was I — yes, today's autos offer longer intervals between maintenance needs, roominess without bulk, advanced electronic and mechanical systems to improve dependability and performance as well as sporty aerodynamic looks.

YOUR NEEDS

Once you've decided you want to get a new car, the first thing you want to do is establish your needs. To do this you should ask yourself questions such as:

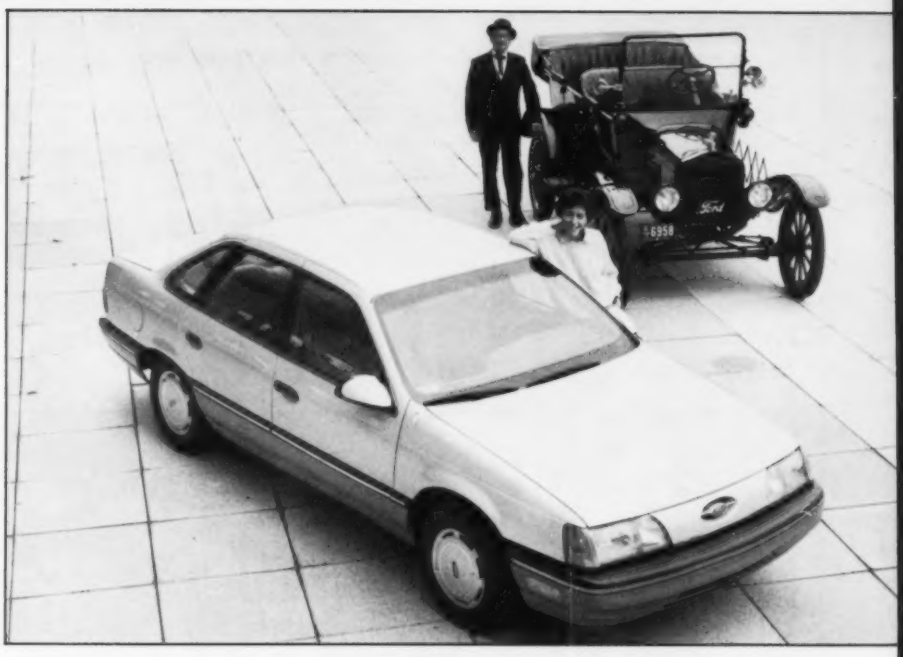
- Will the car be used for long distance driving or for running errands around town?
- Do you really want a luxury vehicle or are you trying to economize?
- What type of body style and size do you need?
- What type of cargo must it haul?
- What fuel economy figure is important to you?

"That's very short-sighted planning. I keep cars from three to six years and my needs change during that time. Such as the time I went to Germany. . . ."

You're right, Mr. Testy. Your choice should reflect your current needs as well as future changes in your life style.

For example, marriage could change your needs from two primary vehicles to a single primary plus a secondary vehicle. In other words, you could end up trading two small cars for one large and one small model.

Also, families have been known to grow, which could require additional passenger capacity. And, as you pointed out, employment changes could alter your usage, as can a change in residence. You could end up driving under much different conditions.



(above)
Buying a new car today such as the Ford Taurus may take a great deal of shopping, but as a percentage of your income it is far less expensive than the Model T was in its day.

HOMEWORK

Once you've specified your needs, you can narrow down your choice to several models within your price range. To do this, review all the available information and visit dealership showrooms.

Available information includes the wide selection of literature dealerships provide about the vehicles they sell. In addition, many automotive and consumer magazines offer buying hints along with new model tests. Buyers' guides listing base prices, specifications and fuel economy figures are also sold by numerous publishers.

"If you miss these magazines and/or guides on the newsstand they're usually available in libraries."

Thanks, Mr. Testy.

"You're welcome."

SHOWROOM INSPECTION

Your next stop is the showroom visits. Stop at several and acquaint yourself with the models and options.

Now is the time to examine the size, appearance and various body styles of the cars you've selected. It's also an opportunity to see how well the cars actually fit you.

First, see how easy it is to get in and out of the driver's seat. Then run the seat through its full adjustments before positioning it for your driving comfort.

Check out the up-and-down and side-to-side vision through the windshield. Then observe how well you can see around the vehicle from the driver's seat.

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(below)
Convenience items such as cruise control help make new cars real bargains when compared with earlier models.

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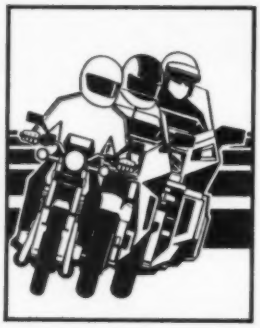

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Among the things you need to ask yourself is what type of body style and size do you need?

Now note the field of vision provided by the rear view mirrors, inside and out.

Check the instrument panel. How well positioned is it? Are all the gauges visible and easy to read when you're in your driving position with your hands on the steering wheel? Can you reach and operate every control with the safety belts on? Also, can you operate the major controls without taking your eyes off the road?

Without getting out of the driver's seat, check out the window controls, door handle, door locks. . . .

"And more importantly the stereo balance and bass."

You'll also want to check the arm rests locations for comfort.

Now note the head, shoulder and leg room as well as the comfort in every seat. While you're at it, open the trunk or hatchback to see if the space is sufficient to handle what you carry. Also imagine how easy loading and unloading might be.

This is a good time to get comparison vehicle base prices from the window stickers. You'll also want to look at the dealers' catalogs to learn about the various trim levels as well as materials, colors and options.

TEST DRIVE

The most important and final step in deciding if a certain car will fill your needs is the test drive. Be as thorough as possible in your test drive. Make sure you drive on streets similar to your day-to-day routes.

Remember, a test drive doesn't obligate you to buy.

Check to see how well the car meets your needs.

- Note the overall ride smoothness.
- Check the performance, acceleration, passing ability, etc.
- Check your visibility and command of the road.
- Note the ease of steering, how the vehicle handles and how well the brakes perform.
- How easy is it to maneuver in tight places and park?
- Listen for road noise at all speeds.
- How efficient are the heater and/or air conditioner?

"How good is the stereo?"

You've being very helpful, Mr. Testy.

"Don't get sarcastic with me, sonny."

If you have any questions during the test drive, talk them over with the sales representative while you're still in the car.

As you're leaving the vehicle, take the time to look at the fit and finish of the body.

OPTIONS

Once you've narrowed your selection to the car or cars you're seriously interested in, you can start thinking about what optional equipment you'd like. You have to compare the cost of an option to

continued

the benefit you'll get from it and its effect on the resale value of the car. Options are long-term investments just like the car itself. Some traditionally retain a higher retail value, but options obviously raise the initial price of the car.

You'll also want to compare the price of the individual options you're interested in to the price of package options at special prices.

Some of the more popular options and their approximate manufacturer's suggested retail sticker prices are:

- Automatic transmission $370-$410
- Power steering $170-$195
- Power Brakes $75-$95
- Power seat $130-$195
- Power windows $150-$240
- Power door locks $120-$185
- Electric trunk lid release $20-$45
- AM/FM Radio $50-$75
- AM/FM Stereo $85-$110
- AM/FM Stereo Cassette $170-$200
- Air conditioning $560-$710
- Automatic speed control $140-$155
- Dual remote control mirrors $40-$65
- Interval windshield wipers $45-$50
- Electric rear window defroster $110-$125
- Tilt steering wheel $85-$105
- Tilt-up moon roof $240-$255
- Tinted glass $75-$100
- Illuminated entry system $60-$75
- Two-tone paint $85-$185
- Vinyl roof $125-$165
- Wire wheel covers $125-$155
- Heavy duty battery $20-$30
- Clock $25-$60
- Extended service plan $175-$670

Your first stop after doing your homework is dealer showrooms.

WHERE TO BUY

As important as which car you buy is where you buy. Answer the following questions about each dealership you're comparing.

- Does the dealer have a good reputation?
- Does the dealership advertising seem high-pressure?
- Are the sales representatives courteous?
- Does the sales representative believe you're serious about purchasing?
- Does the sales representative keep you waiting?
- Do the sales personnel know their product?
- Is the sales representative willing to "deal?"
- Is the service area neat and well-equipped?
- Is the dealership relatively near your home or work?
- Is the dealership well stocked?
- Is the dealer's credit good?

The first and last questions are a matter of checking around, not only with people that have bought cars from or had cars serviced by the dealership, but with other business people. Banks and the Better Business Bureau are excellent information sources.

If you still have some questions about the dealer's reputation, consider how long s/he's been in the same location.

TIME TO BARGAIN

Now that you've decided on what car you want and where you want to buy it, it's time to bargain for the best deal.

Sticker price is the manufacturer's suggested retail price.

"I don't believe anything on those window stickers! There's so much junk listed and those prices don't have anything to do with anything! Besides, those mileage figures are pure imagination!"

Calm yourself. All that "junk" is a complete list of standard and optional equipment, and its recommended selling price. You and the dealer's sales representative will have to come to an agreement on how much you actually pay.

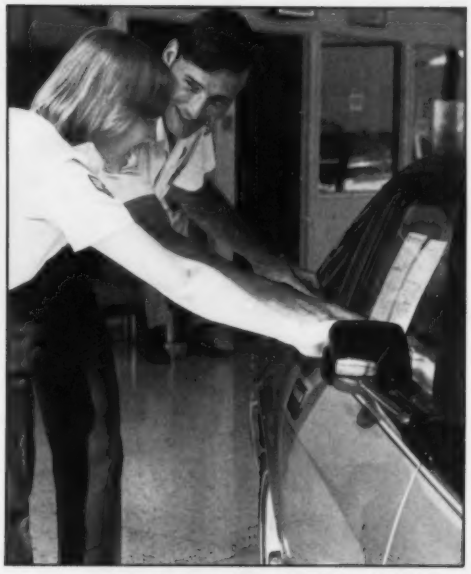
As for the mileage figures, the U.S. Environmental Protection Agency annually figures the fuel mileage of all domestic and foreign vehicles sold in this country. This number is the result of simulated driving tests and is meant for comparison of gas mileage among vehicles. As you've heard so many times before: Your actual mileage may vary depending on road conditions, your driving habits and your vehicle's equipment.

What you actually spend on the car can be more or less than what the sticker says. If you want a car that's in high demand, you could end up paying what the sticker says or more. But usually you can bargain the price down.

"I always wait until the dealers advertising $1 over invoice to get the best price."

It's not that easy to tell if you're get-

In shopping for a good dealer, don't overlook the service department's reputation.



The window sticker contains a lot of necessary information.

Shopping for options has never been easy, and with today's growing list of available equipment including cellular mobile phones it's becoming even more complex.

ting the best price. Most dealerships are actually small businesses and earn less than one percent on the sale of each vehicle. In addition, the manufacturers usually give the dealerships back about three percent of the invoice price on each car sold. There are also other incentives the auto makers add to these holdbacks for slow-moving models and at the end of the production year.

The manufacturers also give the dealers about $50 to perform pre-delivery services on each car, but that usually just covers the expenses involved.

Other pre-vehicle expenses dealerships have included:

- $30-$150 for building rent and maintenance.
- $170-$350 for floorplan interest (interest on the loan the dealer has for the cars in stock).
- $80-$105 for advertising and promotion.
- $110-$250 in sales staff commissions.
- $100-$550 for miscellaneous expenses including income taxes.

Dick Ritchins, whose R.M.A. company analyzes and advises operations of about 250 dealerships nationally, says dealers have to average well over $200 per car profit on their immediate sales (before holdbacks) in order to avoid negative cash flow. That means the average dealership has to clear somewhere between $800 to $2,000 on each car in order to avoid having cash going out the door.

Dealers can make some extra money by arranging financing and insurance, but then they must do all the paper work which is an additional expense for them.

There are magazines and guides available that list the wholesale prices dealers pay for cars and options. You can also get a clue from the window sticker.

Sub-compact car stickers are about 10 percent over dealer cost. Compact car prices range from 10 to 12 percent over cost, while list prices for larger vehicles are in the 12-to-14-over cost range. Options vary from 10 to 14 percent above costs.

One good way to comparison shop is to start with dealers further away from home and work your way closer. By the time you get to the nearest dealership you'll have some figures to bargain with. Most dealers will be willing to match any reasonable offer.

TIME TO BUY

Like you, Mr. Testy, many people think that the best price on a car is available in the late summer and early fall, during the end of the year model build-outs. However, since cars are now introduced when available without regard for the time of the year, it would seem that almost any time is a good time to buy.

The actual deal you make is influenced by a host of factors — including demand and supply of specific models, used cars prices, weather, special promotions, incentive programs and interest rates.

Negotiate the price of a new car without a trade; then bargain over the value of the trade-in. The important number is the difference between your old car and the cost of the new one.

"I always sell my old car myself. That way I get a lot more than what the dealer offered on it."

Maybe you will, and maybe you won't.

continued

While you might get what appears to be more for your old car than the dealer offered, you have some other considerations. First of all you have to subtract from what you got for the old car the cost of preparing it for sale and running advertisements. Then you have to stay at home and wait for the phone to ring. In addition you end up showing the vehicle to people you don't know plus handling financial transactions and title transfer.

You also have to hope that the used car market hasn't slowed down to the point where you're stuck with your old car for six months to a year.

The most common question asked at this point is: What's my old car worth? You can get an idea by comparing it to similar cars in the want ads and by checking the *Blue Book* which is usually available at the library.

"In the end, a car is only worth what somebody else is willing to pay for it."

That, Mr. Testy, is the truth of the matter.

Now the real work begins. Shopping for credit — including financing and leasing — warranties, insurance and other paperwork as well as accepting delivery of your new car.

SHOP FOR CREDIT

Once you've decided on a purchase, you'll probably have to arrange some kind of financing. While paying cash is generally the least expensive way to go, few of us can afford that kind of out-of-pocket expense. That leaves you with the choice between a loan or lease. And when it comes to financing a new car you can really save money by shopping around.

If you're going the loan route, then you'll probably borrow at least part of the purchase price from one of these sources:

- Bank loan
- Auto manufacturer's finance company
- Credit Union
- Other finance company
- Borrow against your savings or life insurance
- Friends or relatives

Of course, you must first decide how much you can afford for a down payment and the monthly installment payments. Down payments on new vehicles can range from zero to 25 percent, depending on your customer credit rating. (Very often, your old car's trade-in value will cover the cost of the down payment.)

"I usually just tell the salesman that I can afford $330 a month and to call me when the car's ready to be picked up."

The dealer will be more than willing to match your budget to your vehicle and arrange the loan to save you "time and effort." But remember, the dealer is making money off arranging financing, so you might be able to get a better deal elsewhere.

By the way Mr. Testy, how did you come up with the figure of $330 a month?

"Simple. My old car payments were $192 a month an my pay raise was $138 so my new payment is $330."

That's very interesting. What's the insurance costs on your four-year-old Mazda GLC?

"About $500."

And do you know what they're going to be on that Porsche you've been looking at?

"I've got a clean driving record, and I'm over 30; So how bad could they be?"

As I've already checked, the insurance bill will be closer to $1,000 a year, or double what you're paying now. That's $41.67 a month more.

The supply and demand of vehicles such as station wagons can have a huge influence on the price you finally pay.

"You think you're pretty smart don't you?"

I'm just asking questions that every new car buyer should ask before deciding how much he or she has to spend on monthly installments.

"Have you got any more sharp questions?"

Sure, what are you paying each year for license, registration and other taxes?

"$82."

The annual fees for the Porsche are going to be closer to $600. That's another $43.17 per month.

"Anything else, smart guy?"

There's always gas, oil, maintenance and tires.

"All cars use gas, oil, maintenance and tires. So what?"

Yes, but some cars need more gas, more oil, more maintenance and tires more often than others. And some vehicles cost more to maintain.

"Like the Porsche?"

Like the Porsche.

"The costs of ownership can sneak up on you."

Yes, they can. That's why you have to plan ahead and ask the right questions.

For example, interest rates vary widely among dealers, banks and credit unions, so shop and compare. Always look for the lowest annual percentage rate (APR). But also look carefully at the total cost.

If you read the small print on many of the current single digit interest rates offered by the manufacturers you'll note that the dealer's participation can make a difference in the total price. For example, with a $2,000 down payment you might be eligible for a 7.9 percent APR loan *or* the dealer might give you a $1,000 rebate. If you were to take that $1,000 rebate and arrange financing through your credit union (again with your original $2,000 down) at 12 percent APR or less, your payments and total cost would be less.

Of course, the longer the repayment period (36-48 months being the most common for new cars), the more interest you're going to pay. However, the few dollars per month difference over a longer period of time may fit your overall budget needs better.

As was said earlier, shop all types of lending institutions. Often, finance companies are willing to lend to people without established credit or those of higher risk, but are generally the most expensive places to borrow.

If you have never used credit or your charge accounts are in your spouse's name, you will have to establish a credit rating. To do this, have all your creditors report all information concerning loans, credit card accounts, utility payments and similar debts on both husband and wife's credit records.

FINANCE TERMS

You may have to use a co-signer to get a loan if you have never used credit before. A co-signer is someone with collateral and a good credit rating who agrees to make your payments if for any reason you don't.

"I never have understood all those funny words and terms they use when talking about loans."

There are some other finance terms that you should be familiar with when shopping for a loan. The more common financing terms include:

Finance Charges: The entire amount of charges paid for the term of the loan.

APR: Annual percentage rate is a standardized calculation of the finance

continued

charges figured on an annual basis.

Add-on Interest: A short-hand method for calculating the finance charges on an equal monthly payment contract. The original unpaid balance is multiplied by the add-on rate times the original contract term in years.

Credit Life: Insurance coverage that pays off the balance on your loan if you die.

Disability Coverage: Insurance that pays your monthly payments (or a specific amount) during periods you're disabled. Usually there is a waiting period before this starts.

Deferred Payment: An installment payment that is made after the original due date by agreement between you and your finance company.

TRUTH IN LENDING

Any financial institution that gives you a loan must provide you with the following information according to the Federal Truth In Lending Act.

- Price of product to be purchased.
- Amount of down payment and/or value of trade-in.
- Balance to be paid.
- Itemized list of charges other than finance charges.
- Total amount to be financed.
- Total finance charges in dollars and APR.
- Number of payments, their amount and due dates.
- Deferred Payment Price, including all payments to be made, in addition to down payment.
- Charges that will be made for late or default payments.
- Consequences of any missed payments.
- Description of any security of yours held by the creditor as collateral.
- Provisions for early payment.

LEASING

Leasing has become an attractive alternative to buying for many people. Leases vary widely in terms of length and mileage. They can include insurance and/or maintenance in one monthly charge.

Most leasing arrangements are drawn up for two- or three-year periods, making it possible to have a new vehicle more often than if you purchase.

Basically, with a lease you are only paying for the period of time you use the car. Whereas, when you buy, you are committed for the entire cost of the vehicle.

"That's great, but I still don't understand leases."

There are two types of leases:

Closed-End: When the term of your lease is up, you assume no responsibility for the sale price of the vehicle unless it is damaged or has more miles on it than anticipated at the beginning of the lease.

Open-End: You assume responsibility for any difference in the sale price of the vehicle if it is different from the estimated price figured at the beginning of the lease. If the sale price is higher, you keep the profit. If the price is lower, you pay for the loss.

Monthly payments are generally lower with the open-end lease since you are sharing some of the risk.

TRUTH IN LEASING

If you lease a vehicle for personal, household or family use, The Consumer Leasing Act requires that you be provided with the following information:

- Brief description of the leased property.
- Amount of deposit required at the beginning of the lease.
- Amount of official fees, registration, title or licensing fees or taxes.
- Statement of responsibility if lease is "open-ended."
- Amount of charges in addition to regular payments.
- Purchase option, if available.

When considering the overall costs of ownership, don't forget insurance rates, especially for vehicles such as the MR2 and Fiero.

You can bet that good deals and low interest rates will be hard to come by on high demand, newer model vehicles such as the Jeep Wrangler.

■ Responsibilities of the consumer at the end of the lease period.

■ Servicing and maintenance responsibilities.

■ Insurance requirements and responsibilities.

■ Description of any security held on the lease.

■ Number, amount and due dates of payments and the total of all payments.

■ Conditions for early termination and charges for delinquent, default or late payments or early termination.

WARRANTIES

Standard warranties for most domestic and for many imports are for 12 months or 12,000 miles, whichever comes first. Some automakers have longer warranties. All automakers have a rust warranty, most for three years and some for five years.

"What about extended warranties?"

Many automakers and private firms offer auto service contracts to extend their car warranty coverage. Car owners pay a one-time registration fee and usually a deductible on the parts and labor costs. Ask for an explanation of the various programs and coverages.

AIC recommends checking the extended policy carefully to make sure you understand what portions of the car are covered before purchasing the contract.

Financing a car should be undertaken with the same care used to get a mortgage.

INSURANCE

Many states require all vehicle owners to carry a minimum amount of liability insurance. Buying only the minimum coverage demanded by law is not a good idea. Usually the cost difference between minimum and maximum protection is not large. Should you cause an accident, damages will be awarded without regard to the size of your policy. If a judgment against you is for $100,000 and you're insured for only $25,000, paying the remaining $75,000 is your responsibility, not the insurance company's.

"I just tell the dealer to write the insurance coverage into the loan. That way I don't have to know anything about it."

Talk about not knowing anything about anything. That way not only could you end up paying through the nose for insurance, but you also end up paying interest on the cost of insurance.

Automotive accident insurance is available from independent agents or direct from some major insurance companies. If you have not had previous experience with an agent or company, your dealer is probably prepared to give you assistance. The coverage, cost and settlement practices of any insurance company you are considering should be reviewed thoroughly.

"Well, maybe, but I still wouldn't know what to get."

There are many different types of insurance coverage available. Some of the more important ones are:

Liability: This pays for the injuries or deaths of other people and damage to their property when you have caused (or, in some states contributed to) an accident.

Medical Payments: This covers "reasonable" medical and funeral expenses for you or anyone riding with you, whether or not the accident was your fault. The typical maximum payment per person is $1,000 which means that it's usually used to cover small injuries where there's no lawsuit involved.

Collision: This pays for the repair of your vehicle if it runs into something or rolls over, even if the accident is your fault. If the vehicle is ruined beyond repair, the insurance company will give you its cash value, which is usually the cost of the vehicle less depreciation. Collision policies include a deductible, which is the amount of the bill you have to pay before the insurance company takes over.

Comprehensive: This covers theft as well as damage to your vehicle from such things as vandalism, fire, flood or projectiles, animals, explosions, etc. Check

continued

to see if it includes the cost of towing.

Uninsured Motorist: This coverage pays whatever damages for bodily injury (and in some states, property damage) you are entitled to receive from a driver who carries no insurance or from a hit and run driver.

Wage loss and substitute services: This coverage repays at least part of the income you lose because of injury as well as the cost of services (such as child care) that your injury prevents you from performing.

No-fault: Minimum coverage required by law in some states. In the event of an accident, each person's insurance company reimburses him or her for medical claims, loss of wages, etc., no matter who was at fault.

Loaner provision: If this is included in your coverage, your insurance company will pay a set daily rate toward rental of a substitute vehicle while yours is being serviced.

You might want to consider joining an auto club as an additional form of insurance and for the other benefits they provide. Auto club benefits include emergency road service and towing reimbursement, traffic violation defense reimbursement, arrest bond and bail bond protection, and custom trip routing.

WAYS TO CUT INSURANCE COSTS

"Yes, but as you pointed out earlier, insurance costs big bucks. I know people whose monthly insurance payment is bigger than their car payments."

There are ways that you can save on your insurance costs. Some of the better ideas include:

- Ask your agent about discounts (good driver, car pool, low annual mileage, driver's education credit, Defensive Driving Course credit, etc.).
- Take a larger deductible on collision and comprehensive insurance. You will pay for the small repairs yourself but you will be protected against a major loss.
- Insure all your cars with the same company to get a volume discount.
- Tell the insurance company about any changes in circumstances that might affect your rate (age, change in marital status, etc.).

FINAL PAPERWORK

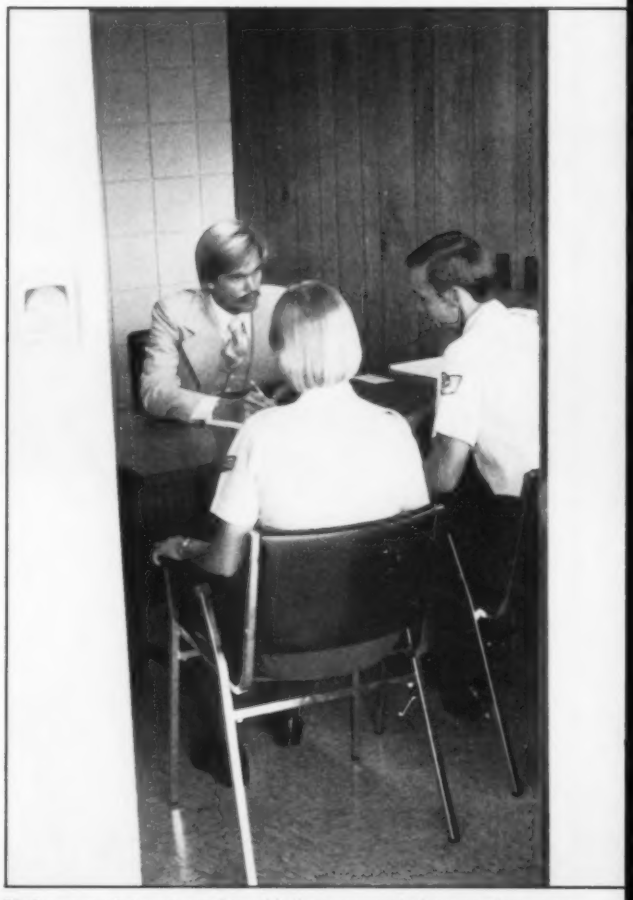
Once you have chosen a car and optional equipment, settled on a price and method of payment there will be paperwork to be signed. These documents usually include:

Buyer's Order: This is a full written description of the vehicle being purchased including base price, option costs, dealer fees and taxes. This is written up when you have orally agreed to purchase a specific vehicle. It is not a legally binding document. You will usually be asked to leave a deposit with your sales representative, which may be refundable if you should decide not to purchase the vehicle.

Title Application: This is a legal document used to register your vehicle with the state licensing bureau. It includes the buyer's name and address, the vehicle identification number, a description of

Leasing is no longer limited to commercial uses such as company vans. Leasing now has a place in personal, household and family applications.

Although both Monte Carlo Super Sports are basically the same, odds are the insurance rates on the fastback will be more than on the normal SS.



Make sure that you can live with the paperwork that you sign, even if it means taking it to the judge advocate's office for review.

the vehicle and a complete breakdown of the purchase price.

Finance Contract/Lease Agreement: This is a legally binding document listing the terms of the loan or lease, (amount of payments, number of payments, finance charges and the responsibilities of the buyer or lessee).

Extended Service Contract: If you purchase a manufacturer's extended service contract, your dealer will register your vehicle with the manufacturer so that you may obtain the services available through the program.

ACCEPTING DELIVERY

"After all that paperwork, I can't wait to get behind the wheel of my new car and show the world what I've got."

The day you take delivery of your new car is always a special one. Unfortunately, many people are blinded by "new car fever" and forget to look the car over before driving it home.

Many misunderstandings could be avoided if consumers would spend a few minutes looking over their new car and clearing up any questions they have before driving it home. It's a good idea to avoid taking delivery of the car during the evening hours, if possible. It is much easier to give the car a thorough inspection in the daylight.

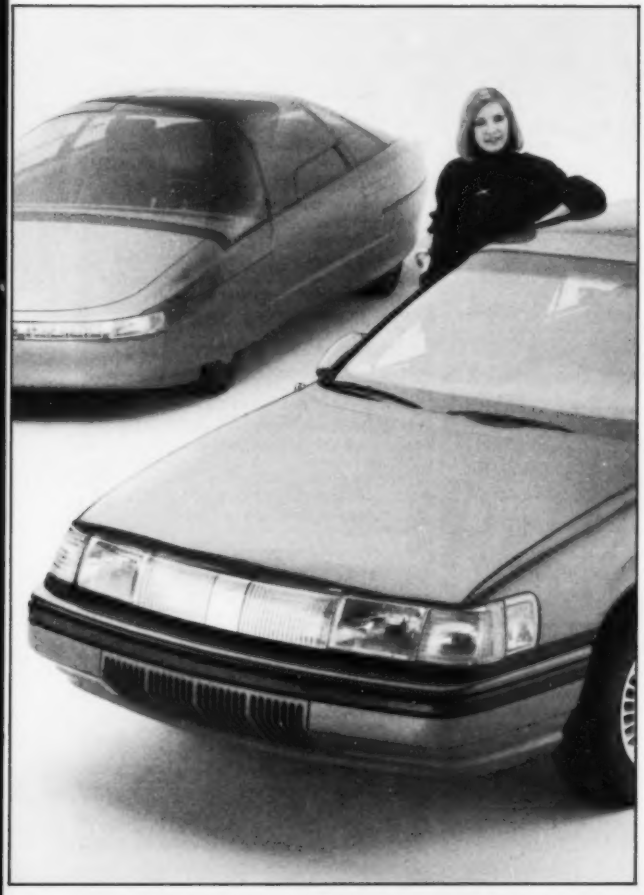
- Check the options you ordered by comparing the window sticker, the vehicle and the bill of sale.
- Check the condition of body, trim, paint, upholstery and carpeting.
- Check alignment of body panels and moldings.
- Make sure everything is in operating order (heater, air conditioner, radio, brakes, doors and lights, audio system and other options).
- Roll the windows up and down, checking for proper fit.
- Take a short test drive to determine if the vehicle is running properly.
- Check to make sure that items such as cigarette lighters and spare tire jack are there.

While you are sitting in the car, get the owner's manual out and look it over for the placement and function of all knobs and buttons. Once at home, you can read the owner's manual more carefully, noting all warranty information and the maintenance schedule to keep your new car running right.

Cars can be damaged while in transit to the dealer and a small flaw can inadvertently be overlooked while the car is being prepped by the dealer. If you should find a problem, note it and talk it over with your sales representative or the dealer's service department before you leave so that an adjustment can be made as soon as possible.

Keep a list of any other problems you notice in the first few weeks of driving. Many of these may be repaired at no cost under the manufacturer's warranty.

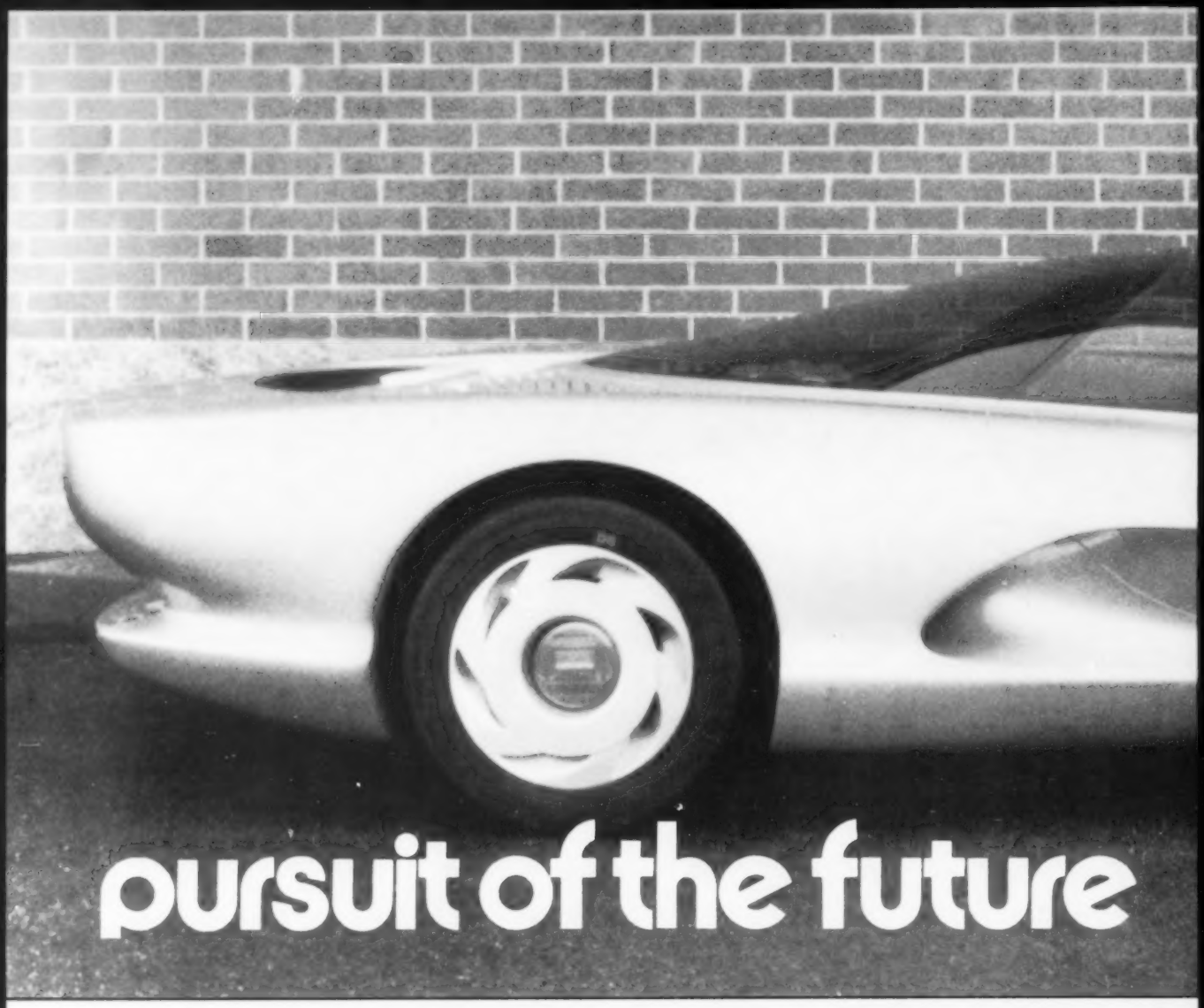
But most importantly, when driving the car for the first time, remember that the vehicle is new to you. You must be extra careful until you learn how your vehicle performs or you'll be inviting an accident to happen. And always buckle up.



Good automobile shopping habits will apply equally to vehicles 100 years from now as they do to the Mercury Sable today.

No matter what, always buckle up.

Take it easy driving your new vehicle home the first time.



pursuit of the future

OK, now that you know how to buy your next new car would you like to take a look at what you may be shopping for in the year 2001?

DRIVER provided a look at Buick's 21st century vehicle, the Wildcat, in the November issue. Now it's time to look at two vehicles from other General Motors' divisions. From Chevrolet it's the Corvette Indy while Pontiac's offering is called the Trans Sport.

First Chevrolet's futuristic two-seat mid-engine research vehicle. Corvette Indy will be the basis for a running prototype featuring a Total Wheel Control system that incorporates all-wheel drive, all-wheel steering, anti-lock braking, traction control and active suspension.

"Rarely has Chevrolet given the public such an early look at a project under development," said Don Runkle, Chevrolet chief engineer. "What we've done is raise the shroud of secrecy — just a little — on a concept program that's been under way for over a year."

Corvette Indy takes its name from its engine — a modified version of the dual overhead cam Chevy Indy V8 race engine being developed for the 1986 Championship Car season.

Corvette Indy's engine displaces 2.65 liters, has four valves per cylinder and is designed to operate on gasoline rather than alcohol used at the Indianpolis 500. It incorporates a special induction system featuring twin turbo-chargers and dual air-to-air intercoolers. Like its full-race counterpart the engine is multi-port fuel-injected.

"The Corvette Indy now being shown is in mid-development stage — kind of a work-in-progress status report," said Runkle. "Chevrolet wants to show the public how a car this exciting actually is developed, and this concept vehicle sets the theme of the design from which will evolve the running prototype."

Beneath its canopy, the Corvette Indy explores the use of advanced electronics and related systems for both driver and passenger.

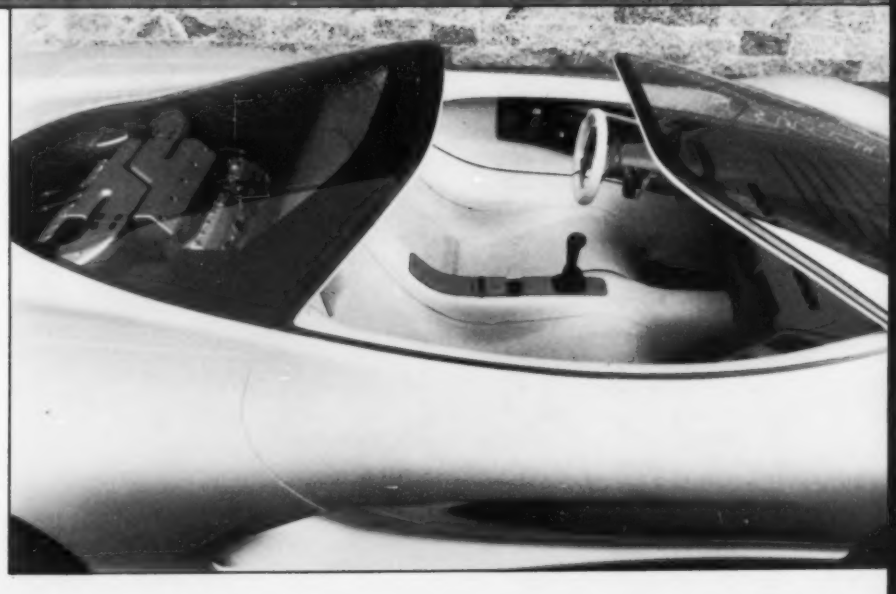
A cathode ray tube (CRT) atop the center of the instrument panel cowl and a dedicated rear camera provide rear vision. Two other CRTs — one in each door — deliver information on vehicle dynamics, navigation and engine operation on command. Each door also houses individual climate and radio controls.

Both seats are secured in a Kevlar tub, the same material used in Formula One racers. Corvette Indy incorporates Kevlar

continued

(above)
Chevrolet's Corvette Indy delivers power to all four wheels and features all-wheel steering. The front wheels can be steered in the conventional fashion, plus the rear wheels are also steerable. Shown here with the removable canopy in place, the Corvette Indy also features a traction control system, anti-lock brakes, a radical new active suspension system and an interior environment that explores the use of advanced electronics and related systems for driver and passenger.

(right)
Carrying on the tradition of mid-engined Corvette research vehicles, the Corvette Indy introduces a passenger compartment designed to provide maximum passenger comfort and security.



The Trans Sport is a futuristic automotive design of Pontiac's multi-purpose concept vehicle. The fluid aerodynamic exterior is distinctive with its generous use of glass, steeply-raked windshield and doors which curve over the roofline. The interior sports six fully-articulating seats, a CRT, personal computer, television, laser disc players and individual radio controls and ear phones at each seat. The vehicle is based on a front-wheel-drive sedan configuration with an approximate length of a full-size station wagon.

and carbon into a honeycomb-shaped material that offers maximum strength and security.

The running prototype will feature full time four-wheel drive and all-wheel steering — steering through front wheels alone or all four wheels.

Rear steering not only enhances low-speed cornering and maneuverability, its application in normal driving means directional changes can occur with minimal turning of the front wheels. As a result, wheelhouses are narrower and less intrusive to the passenger cabin.

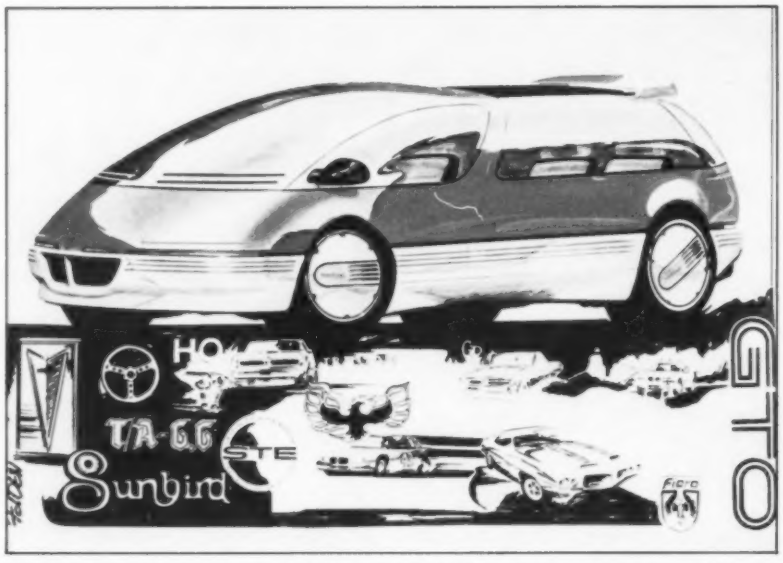
In addition to packaging benefits, rear wheel steering promises improved high-speed handling. A microprocessor will monitor and control rear-wheel steering.

For optimum braking, the prototype Corvette Indy will be equipped with anti-lock brakes. Magnetic wheel rotation sensors detect impending wheel lock-up under braking and transmit a signal to the wheel control system computer. If any wheel decelerates at a faster rate than another, brake pressure is reduced to that wheel.

The anti-lock braking system deters loss of vehicle directional control which may occur during a hard-braking maneuver.

Just as in modern fighter aircraft, where mechanical control links and hydraulics have been replaced with electronic actuation, a computer-controlled system on Corvette Indy will employ a sensor that reads gas pedal position. This information goes to the Total Wheel Control System computer, which activates an electric motor to open or close the throttle.

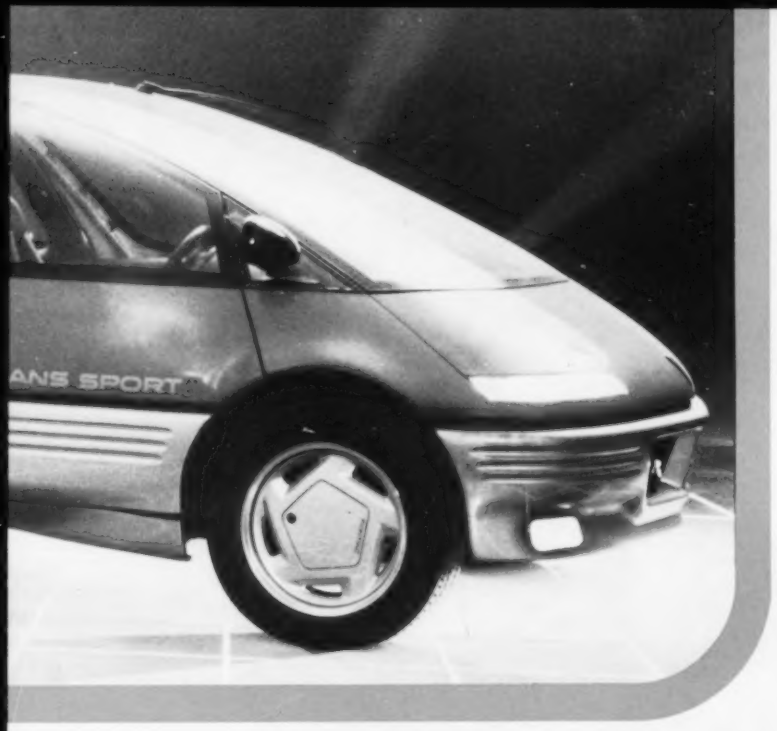
The "drive-by-wire" control interacts with the Total Wheel Control System computer and a traction control system to electronically limit wheel spin. The same sensors that read rear wheel lock-up during braking also send information to the Wheel Control Computer when the vehicle is accelerating. If a wheel accelerates faster than the others, the traction control system sends a signal to the Wheel Control Computer, instructing the system to electronically close or back-off the throttle to deliver maximum usable torque.

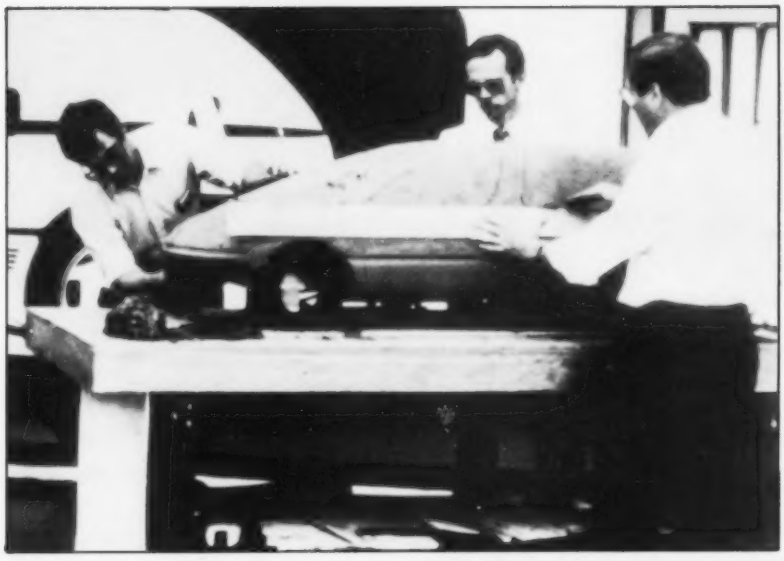


Like all concept cars, the Pontiac Trans Sport started life with some lines on paper. This artist's rendering was created by John Folden, assistant chief designer of the Pontiac Exterior Design Studio.

The piece de resistance of Corvette Indy's Total Wheel Control System is a radical new "active" suspension system that eliminates conventional springs, shock absorbers and stabilizer bars.

Wheel and suspension response is optimized electronically for *all* conditions, maintaining ride quality without compromising excellent handling. Exceedingly fast hydraulics and constant input from the Total Wheel Control System computer change suspension compliance immediately to absorb bumps or stiffen the





Chosen from hundreds of artists' renderings drawn at the Pontiac Design Studios, the final design of the Trans Sport was transformed into a full-sized, to-scale tape drawing. Exterior chief designer, Terry Henline (second from right) supervised the sculpting of a ½-inch scale model of the Trans Sport body, which preceded the construction of a full-scale clay model.

vehicle for hard cornering.

Prototype 1986 Corvettes are already being tested with an active suspension system similar to the one that will appear on Corvette Indy.

"While Chevrolet does not intend Corvette Indy to become a production vehicle in the near future," Runkle said, "doing a car like Corvette Indy encourages our entire organization to dream a little and to push automobile design and engineering to its outer limit."

Of course it's every automotive designer's dream to develop an exciting new multi-purpose concept vehicle from the ground up, showcasing ideas which could be functional and producible in the future.

The challenging assignment at Pontiac is to combine modern technology and design into a vehicle which can hold as many passengers as a full size sedan and have ample space for luggage and supplies, while driving themes of sportiness and excitment into a new form of transportation.

In this pursuit Pontiac introduced the Trans Sport as a futuristic statement in automotive design: aerodynamic, far-reaching and unique in its electronics applications.

"Here at Pontiac, we looked at the Trans Sport as a unique opportunity," explained Terry Henline, exterior design studio chief. "It was our chance to demonstrate the kind of freewheeling innovation you would expect from a totally new breed."

The Trans Sport is the essence of free expression, with its fluid aerodynamic shape. The vehicle is based on a front-wheel-drive sedan configuration extended to a 116-inch wheelbase, the length of a full-size wagon.

These elements allow the central load floor to be extremely long and low. With an overall exterior height of 59.6 inches, the Trans Sport is five to 12 inches shorter than a number of current mini-van/wagon entries; yet its interior walk-through height of 48 inches is nearly equal to those vehicles. The 12.5-inch step-in height and passenger accessibility is closer to a mid-size sedan entrance of 8.9 inches and from four to nine inches lower than the mini-van/wagon models on the road today.

"The generous use of glass provides an extremely pleasant and contemporary interior environment," Henline explained, "while dramatically highlighting the exterior design."

The slanted windshield extends well back over the driver, with the profile slightly raised in a helicopter-like subtle bubble form. "We were able to elevate the driver for improved visibility," Henline said.

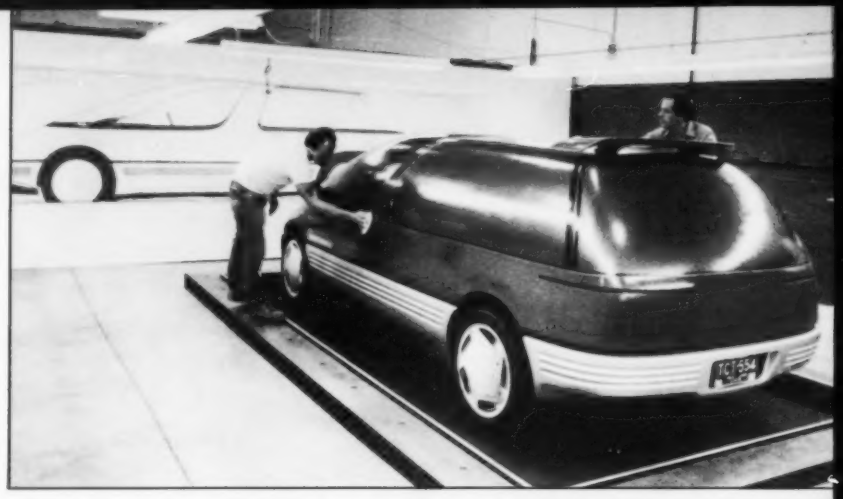
The side windows wrap into the roof resulting in an interior headliner only three feet wide and running the length of the passenger compartment.

Furthering the Trans Sport's clean aerodynamics, the door handles are recessed into the structure of the door. Composite headlamps are narrow openings containing five square units, with long lamps incorporated into the bumper. Taillamps utilize a unique optical system which displays red, amber or clear back-

continued

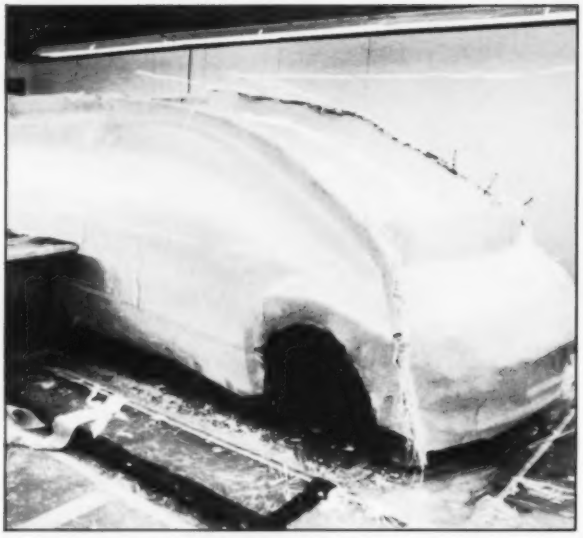
pursuit of the future

continued



(right)
Final smoothing of the vinyl sheets coating the full-size clay form of the Pontiac Trans Sport took place before review by Pontiac officials. Only the tires are actual material. Modeled exactly to scale from the full-size line drawing on the wall, this clay body was eventually destroyed after a two-part epoxy skin was made.

A full-size model of the Pontiac Trans Sport was sculpted in clay over a wooden shell by exterior designers. Here a clay sideview mirror is being installed, headlight openings are being carved. Sheets of colored plastic were stretched over the outer surface to simulate glass, plastic and other material to be used in the construction of an operational model.



A plaster shell was molded over the full-scale clay model placed on front and rear axles. Eventually it was used to form the two-part epoxy body which was assembled into the outer body of the operational, full-scale model of the Trans Sport. Molds of attached body parts were made separately.

up modes.

The distinct Pontiac dual trumpeted exhaust is sculptured into the rear fascia, adding an all-around smooth-surfaced shape to the Trans Sport. The concept vehicle is powered by a unique prototype 2.9-liter V-6 turbocharged aluminum engine not currently offered in any production models. Special 17 by 8-inch wheels with low aspect ratio tires complete the package.

Large, smooth-flowing doorways allow for easy and convenient access to the interior. Driver and front seat passenger enter the conventional way, through front doors which swing wide and curve over the roof line when closed. The gullwing door on the right side opens upward with ample ceiling clearance for garage parking.

According to Pontiac Interior Design studio chief Bill Scott, the interior of the Trans Sport carries Pontiac technology and creativity to new limits. "The first impression is of openness and space," Scott said. "We were given the opportunity to freely explore utilizing any features we felt could be appropriate for use in seats, instrument panel and trim. We think we've set a standard for future interior designs."

From the driver's seat, the steeply-raked windshield combines the light rays of the light emitting diode (LED) heads-up display, which optically projects an image of the speed and other selected driver information through the windshield at a point approximately 12 feet ahead of the vehicle and slightly to the right of the driver's vision centerline.

A cathode ray tube is the central focus of the instrument cluster which is located above the steering wheel for unobstructed viewing. The panel displays a selected variety of functional information and is accessed by controls in the fixed steering wheel hub and control pod centered in the steering wheel. Functions include

Interior designers work on a clay instrument panel inside a wooden frame or "buck" of the full-size Trans Sport model. Like the exterior designs, every part of the interior of the Trans Sport was modeled to scale in clay and covered in vinyl sheeting simulating actual materials.

Clay and material trim were used in the interior model of the Trans Sport. Fully contented instrument panel, door panels and steering wheel surround the unique, articulating seat which has electric transmission shift and other funtional controls in the armrest. This clay and material mockup of the interior was destroyed after actual interior materials were constructed in the operational Trans Sport.

The final front-wheel-drive multi-purpose concept vehicle with its gull-wing door access to the six-passenger interior.

radio with citizen's band, heating and air conditioning, front and rear window defrost, cellular phone, trip computer, navigational information, lamps and horn.

A personal computer is recessed into the passenger side of the instrument panel. The drawer unit with its pop-up screen and keyboard accesses features such as weather reports, accident reports and detours, navigational directions, calculator functions and capabilities for scheduling air travel and hotel reservations.

Another unique feature of the Trans Sport interior is the seating. With its low, long wheelbase, interior design personnel were able to locate the six individual bucket seats in a forward-facing mode while maintaining a low cross-section and profile.

"The seats themselves are a demonstration of design functionality," Scott said. "We wanted to make the Trans Sport another expression of the Pontiac 'driver's car' experience." The driver's seat has electric transmission shift controls on the right articulating armrest and power seat adjusters on the left. The driver's seat has recline and swivel features which also are found on the other five bucket seats. Window and door lock controls are located on the door panels.

A windshield-mounted overhead console contains a scanning screen which replaces the conventional rearview mirror. The television-like display features a digital readout measuring distance of approaching traffic. A cassette player and reading lamps also are located in the console.

Middle and rear seat passengers can view a small television mounted in an overhead console centered behind the driver and front passenger seats. They also can access laser disc players from side panel storage compartments. Each seat has individual radio controls and ear phones.

This is another in a series of articles about driving conditions at ATC installations.

Driving at Goodfellow

by Sgt. Melinda Polst
Goodfellow AFB, Texas

Goodfellow Air Force Base is nestled on the southeast edge of San Angelo, Texas. As evidenced by its vintage World War II buildings, the base was constructed in the 1940s. Unfortunately, most of the narrow roads that dissect the installation are of the same era.

Goodfellow is one of Air Training Command's smallest bases. It encompasses only 1200 acres of land and the majority of its buildings are on 500 acres at the western part of the base.

This concentration, along with narrow streets and limited parking, can challenge the skills of even the most defensive drivers. There are two main gates to Goodfellow. One is located at the south end of Fort McKavitt Road and the other at the north end. Fort McKavitt is considered to be the base's main thoroughfare.

Speed limits on base are strictly enforced by radar. The speed limit on Fort McKavitt is 30 mph, 20 mph on all other roads (unless otherwise marked), 15 mph when approaching or departing the main gates, and 10 mph in the family housing area. Parking lot speeds are set at 5 mph. "No passing" is a rule strictly enforced on all base roads.

Like most Air Force bases, Goodfellow has a runway; however, Goodfellow's flying mission terminated in 1958. Consequently, the base flight line is quite different from most. Where you would expect to see aircraft, you will instead see private automobiles.

The commissary and BX are adjacent to the flight line and this area is often congested with vehicle and pedestrian traffic — especially around payday.

Also located on the flight line is the base aero club. This area also demands driver caution because aircraft are moved from the hangar across the road to the ramp parking area.

Like most other technical training centers, those traveling on Goodfellow are likely to encounter marching troop formations. Keeping the width of the road in mind, and after being waved on by the troop leader, drivers may pass the formation — but only at 5 mph. At intersections, vehicle operators must stop and wait until the roadguards have gone back to the formation.

Goodfellow is an old installation and the streets are very narrow. (U.S. Air Force photo by AIC Marty Klubeck)

(left)
Parked cars add to the congestion of Goodfellow streets. (U.S. Air Force photo by Sgt. Melinda Poist)

(above)
At intersections, drivers must wait until road guards return to formation before driving on. (U.S. Air Force photo by AIC Marty Klubeck)

Goodfellow attained technical training center status March 1 of 1984 and the base is currently undergoing a major construction overhaul. Intelligence consolidation training, which will incorporate activities presently located at three other Air Force bases, is set for 1988 and will swell the population from 2,900 to 4,100.

Naturally, constuction abounds. New buildings are being erected, streets are widening, and a brand new base layout is just over the horizon. While this will help accommodate Goodfellow's growing population and alleviate traffic problems in the future, it currently adds to driving hassles. Fortunately, because the base is small, it doesn't take long to get from point A to point B.

There are no freeways or interstate highways in the San Angelo area, but there are wide thoroughfares that resemble freeways. The interchange to Highway 277, 87 and Loop 306 is about two miles south of Goodfellow. It can be quite confusing to the newcomer. Highway 87 becomes Bryant Boulevard in town and is the main north-south highway in the city. Many mistake it for an expressway and it accounts for most of the accidents in San Angelo.

Lake Nasworthy is a popular fun spot, especially on weekends and in the summer months. The lake is located about eight miles southwest of the base and Goodfellow's recreation camp is located there. Those who visit the site must be careful on the turnoff from Knickerbocker road to the camp because it's a sharp turn on a sloping, curved road and there's usually a lot of traffic.

Rain creates a serious driving hazard in the San Angelo area. When rain falls and mixes with the residue that has accumulated on streets and roads during the long dry period, an extremely slippery surface is formed which contributes to many accidents. There are only a few drainage ditches for water to run off into and flash flooding can occur in the rainy season.

Driving in and around Goodfellow is like driving anywhere else Air Force people work and live: Accident-free for those who practice courteous and defensive operation of their vehicles.

GET IT ON!
MOTORCYCLE SAFETY FOUNDATION

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National Safety Council

STATE MOTORCYCLE EQUIPMENT REQUIREMENTS

JUNE 1985

MOTORCYCLE INDUSTRY COUNCIL, INC.

This information is provided by the Motorcycle Industry Council Government Relations Office. The chart will be updated annually as State Legislatures continue to pass and/or amend motorcycle equipment requirements. Please contact the Motorcycle Industry Council offices listed below for additional information concerning motorcycle equipment requirements or for additional copies of this chart.

STATE	SAFETY HELMET	EYE PROTECTION	REARVIEW MIRROR	BRAKES	HANDLEBAR HEIGHT	PASSENGER SEAT*	PASSENGER FOOTRESTS*	PASSENGER HANDHOLD*	HEADPHONES PROHIBITED	TURN SIGNALS	SPEEDOMETER/ ODOMETER	HEADLIGHT DAYTIME USE	PERIODIC INSPECTION
Alabama	●		●	●-13	●-17	●	●						
Alaska	●-5	●-k	●-11	●-13	●-17	●	●	●	●				
Arizona	●-4	●-j	●	●-12	●-17	●	●	●					●-23
Arkansas	●	●	●	●-12		●	●	●				●	●
California	●-9		●	●-13	●-19	●	●		●-n	●-b		●-l	●-25
Colorado		●	●	●-12		●	●						●-25
Connecticut		●-j	●	●-13, g	●-17	●	●					●-e	●-25
Delaware	●-1, 7	●	●	●-12	●-17	●	●			●			●
Dist. of Col.	●	●-j	●	●-13	●-17	●	●	●			●-20		●
Florida	●	●	●	●-13	●-17	●	●		●			●	
Georgia	●	●-j	●	●-12	●-17	●	●		●			●	
Hawaii	●-1, 4	●-j	●	●-12	●-17	●	●						●
Idaho	●-4			●-12		●	●						
Illinois		●	●	●-12	●-17	●	●-o	●-p	●			●	
Indiana	●-4	●-4		●-13	●-17	●	●					●	
Iowa			●	●-12	●-17	●	●				●	●-h	
Kansas	●-4	●-j	●	●	●-19	●	●			●-b		●-q	●-25
Kentucky	●	●	●	●-12		●	●						
Louisiana	●	●-j	●-10	●-12	●-17	●	●						●
Maine	●-3		●	●-12	●-19	●	●					●	●
Maryland	●-1, 4	●-j	●-11	●-12	●-17	●	●	●-g	●-n		●-g		●-24
Massachusetts	●	●-j	●	●-13	●-17	●	●		●				●
Michigan	●	●-2, j	●	●-13	●-17	●							●-25
Minnesota	●-4	●-j	●	●-12	●-19	●	●		●-n			●	●-25
Mississippi	●		●	●-12	●-14, #	●					●-20, #		●
Missouri	●			●-12	●-17, #								●
Montana	●-4		●	●-13		●	●					●	
Nebraska				●-12	●-16	●	●						
Nevada	●	●-j	●-11	●-13	●-17	●	●			●			
New Hampshire	●-4	●-j	●	●-12	●-17	●	●	●-g		●	●-g		●
New Jersey	●-1	●-j	●	●-12	●-19	●	●						●
New Mexico	●-1, 4	●-j	●	●-13	●-17	●	●						●-25
New York	●-1	●	●	●-13	●-17	●			●-n	●-a	●-21, f	●	●
No. Carolina	●		●	●-12		●	●					●	●
No. Dakota	●-1, 4		●	●-13	●-17	●	●				●		
Ohio	●-4, 8	●-j	●	●-12	●-17	●	●						●-25
Oklahoma	●-4	●-j	●-11	●-13	●-15	●	●				●-20		●
Oregon	●-4		●	●-12	●-19	●	●			●-b		●	●-25
Pennsylvania	●	●	●-d, #	●-13	●-19	●	●	●			●-g		●
Rhode Island		●	●	●-12	●-17	●	●	●	●		●-20, a		●
So. Carolina	●-1, 6	●-6, j	●	●-13	●-17	●	●					●	●
So. Dakota	●-4	●-j	●	●-12	●-17	●	●						
Tennessee	●	●-j	●	●-12	●-17	●	●					●	
Texas	●-1, 4		●	●-13		●							●
Utah	●-4		●	●-12	●-14	●	●				●-22		●
Vermont	●-1	●-j	●	●	●-17	●	●						●
Virginia	●	●-j	●	●-13, c	●-17	●	●		●				●
Washington		●-j	●-11	●-13, a	●-17	●	●		●			●	●-25
W. Virginia	●-1	●	●	●-12	●-17	●	●					●	●
Wisconsin	●-4, m	●-k	●	●-12	●-18	●	●				●	●	●-25
Wyoming	●-4		●	●-12	●-17	●	●					●	

● Requirement in law
* If carrying a passenger

1. Reflectorization
2. Where speeds exceed 35 mph
3. Under 15 years, with learner's permit, or for 1 year after obtaining license
4. Under 18 years
5. Under 19 years
6. Under 21 years
7. Possession by all, wear under 19 years & by instruction permit holders
8. Novice license holders
9. Under 15½ years
10. Left side
11. Left and right side
12. One wheel
13. Both wheels
14. Maximum of 10" above fasten point
15. Maximum of 12" above fasten point
16. Maximum of 15" above fasten point
17. Maximum of 15" above seat
18. Maximum of 30" above seat
19. Handgrips below shoulder height
20. Speedometer
21. Speedometer with both mile and kilometer calibrations
22. Odometer
23. Annual emissions inspection
24. Upon transfer of title
25. Ignition

a. If originally equipped by manufacturer
b. For motorcycle manufactured after 1/1/73
c. For motorcycle manufactured after 7/1/74
d. For motorcycle manufactured after 4/1/77
e. For motorcycle manufactured after 1/1/80
f. For motorcycle manufactured after 9/1/80
g. For 1974 or later model year motorcycle
h. For 1977 or later model year motorcycle
i. Manufacturer requirement for motorcycle manufactured after 1/1/78
j. Except if equipped with windscreen
k. Except if equipped with windscreen 15" or higher
l. Instructional permit holders
m. Prohibited in both ears simultaneously
n. Must be adjustable
o. Must be attached to seat or saddle
p. For motorcycle manufactured after 1/1/78
q. In rider's possession

Required by inspection regulations

Many state inspection regulations require that any equipment installed on a motorcycle must function properly even though the equipment is not required by law.

Although this chart represents information from the most authoritative sources available as of the date shown above, the Motorcycle Industry Council is not responsible for accuracy or completeness.

Information concerning equipment requirements in Canada can be obtained from the Motorcycle & Moped Industry Council (MMIC) at 45 Richmond St., West Suite 204, Toronto, Ontario, Canada M5H 1Z2; (416) 863-1746.

STATE OFF-HIGHWAY MOTORCYCLE REQUIREMENTS
JUNE 1985

MOTORCYCLE INDUSTRY COUNCIL, INC.

This information is provided by the Motorcycle Industry Council Government Relations Office. As State Legislatures continue to enact and/or amend off-highway vehicle programs and requirements, new charts with updated information will be issued. Contact the Motorcycle Industry Council offices listed below for further information concerning off-highway vehicle legislation or for additional copies of this chart.

STATE	OFF-HIGHWAY REGISTRATION	VEHICLE TITLE	OPERATOR LICENSE	MINIMUM AGE TO OPERATE	OFF-HIGHWAY EQUIPMENT REQUIREMENTS: LIGHTING	BRAKES	MUFFLER	SPARK ARRESTOR	OTHER	RIDER EDUCATION	STATE OHV FUNDING	OHV ADVISORY COUNCIL	STATE OHV AREAS	TOTAL MOTORCYCLES USED OFF-HIGHWAY AT SOME TIME
Alabama		7											Yes	85,100
Alaska		7					●-D						Yes	33,600
Arizona		●					●-C						Yes	73,400
Arkansas		7										Yes		85,400
California	●-1A	●			●-17	●	●-19C	●-20		30	●-26	Yes	Yes	457,100
Colorado		8					●19-C						Yes	63,700
Connecticut	●-3	7			●	●	●						Yes	29,100
Delaware	●-4A	8		●-11	●-17	●	●-19C	●	●-21	30	●-25			6,800
Dist. of Col.		●												300
Florida	●-5BE	●					●-D		●-21D				Yes	138,200
Georgia		8				●	●							94,800
Hawaii													Yes	—
Idaho	●-5A	8					●-19			30	●-26	Yes	Yes	44,500
Illinois		7												116,200
Indiana	●-4BE	●-9		●-12	●	●-18	●				●-25			86,100
Iowa		8					●-D						Yes	66,200
Kansas		7												44,500
Kentucky		7												49,700
Louisiana		●												119,900
Maine		●-10							●-29					27,000
Maryland	●-5BD	7	●-2D	●-15	●-17D	●-D	●-19D				●-25		Yes	36,100
Massachusetts	●-5B	7		●-12	●	●	●-19	●	●-21				Yes	41,300
Michigan	●-6A	8		●-13	●-17	●-18	●-19C	●		30	●-25	Yes	Yes	148,400
Minnesota		●-9											Yes	100,900
Mississippi		●-9											Yes	65,000
Missouri		●					●-D	●-D					Yes	79,400
Montana		8												34,600
Nebraska		8											Yes	40,000
Nevada		●-9						●-E						20,900
New Hampshire	●-4B	8		●-11	●	●-18	●-19	●		30,31	●-27	Yes		22,000
New Jersey		8												56,400
New Mexico	●-5A	●											Yes	31,400
New York	7	8												139,500
No. Carolina		8										Yes	Yes	76,100
No. Dakota		8					●-18D						Yes	24,900
Ohio	●-5A	8	●-E	●-14	●-17	●	●				●-25		Yes	132,500
Oklahoma		8			●-D		●-D	●-D	●-21D			Yes	Yes	85,300
Oregon		7			●-17	●	●-19	●					Yes	72,800
Pennsylvania		8					●-D	●-20D					Yes	144,500
Rhode Island	●-5B	●		●-15	●-17	●	●-19		●-23				Yes	8,100
So. Carolina		●-9			●-D	●-D	●-D	●-D					Yes	35,000
So. Dakota		●-9					●							22,200
Tennessee		●					●-D	●-D					Yes	101,800
Texas		●					●-D	●-20D	●-21D				Yes	266,800
Utah	●-4B	8		●-16	●-17	●	●-19C		●-24	30	●-25	Yes	Yes	72,500
Vermont		8												11,300
Virginia		8					●							64,300
Washington	●-4A	8			●-17	●	●-19	●		30	●-26	Yes	Yes	105,600
W. Virginia		7												43,200
Wisconsin		8									●-26	Yes	Yes	91,000
Wyoming		8												80,200
U.S. Total														3,815,000

● Requirement in Law

1. Except street-registered OHMs. Identification sticker required to transport competition OHM
2. Unless supervised.
3. Not implemented for OHMs.
4. Except street-registered OHMs or OHMs in races.
5. Except street-registered OHMs.
6. Except OHMs in races.
7. At owner's option.
8. Not issued for OHMs.
9. Required only if ten years.
10. Not issued for OHMs under 300 cc. Optional for others.
11. 12 unless supervised.
12. 14 unless supervised.
13. 16 unless outermost or 12 with OHV safety certificate.
14. 16 unless supervised. Minimum 12 in state's OHV areas.
15. Minimum 10/16 unless supervised in state OHV areas.
16. 16 unless supervised.
17. Night operation only.
18. Specific performance requirements.
19. Decibel sound limit specified.
20. Approved by U. S. Forest Service
21. Approved helmet.
22. Approved helmet if under 16.
23. 16 sq. in. reflective material each side of OH
Approved helmet in OHV areas.
24. Approved helmet in competitive events.
25. Registration and other fees.
26. Fees and gasoline tax allocation.
27. Registration and other fees. Gas tax refund off-highway users.
28. Special appropriations.
29. Approved helmet if under 15.
30. Safety education & info program available
31. Required for ages 12-16 to cross highway

A. By Motor Vehicle Registration Agency.
B. By Recreation Management Agency.
C. Except in authorized competitive events.
D. [illegible] Applies only in state OHV areas.
E. Applies only in state OHV areas.

OHM SOUND LEVEL LIMITS

		TEST PROCEDURE
CA	Manufactured before 1973 92 dBA, 73-74 88 dBA, 75 and after 86 dBA.	a
CO	Manufactured 1971-72 96 dBA, 73 and after 94 dBA, different local limits also permitted.	a
DE	Manufactured 1973 and after 96 dBA or EPA limit.	b
ID	92 dBA.	c
MD	Manufactured after 6/76 96 dBA, 79 and after 94 dBA.	a
MA	103 dBA.	d
MI	Manufactured before 1973 90 dBA, 73-74 86 dBA, 75 and after 96 dBA or EPA limits.	a
NH	Manufactured 1973-74 88 dBA, 75 and after 96 dBA.	a
ND	86 dBA.	e, b
OR	In use: Model year 1975 and before 102 dBA, 76 and after 96 dBA. Certification 1977-82 models 01 dBA, 83-87 78 dBA, 87 and after 75 dBA. Racing: 105 dBA.	e
RI	Manufactured after 5/72 92 dBA, after 5/74 72 dBA.	a
UT	92 dBA.	b
WA	96 dBA or 105 dBA.	a, d

TEST PROCEDURE

a. Acceleration test 50 feet incorporating SAE J331a or similar test method.
b. Passby test 50 feet.
c. Passby test 20 feet.
d. Stationary test 20 inches.
e. Measured at 50 feet. Test procedure not prescribed.

Although this chart represents information from the most authoritative sources available as of the date shown above, the Motorcycle Industry Council is not responsible for accuracy or completeness.

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BARRIERS THAT INCREASE SAFETY

Barriers are everywhere you drive. There are barriers to keep vehicles from crossing into oncoming lanes of traffic. There are barriers to prevent vehicles from impacting objects. There are barriers to stop vehicles from going into deep holes, ravines, rivers and the like.

Of course there are a variety of barriers that have been developed and used over the years. Old wooden rails and metal cables strung between wooden posts have been replaced with steel guard rails. There have been hedges and wire mesh fences. There are concrete walls. In addition, there are plastic barrels filled with water or sand.

The variety seems endless with new types of safety barriers being added to the list each year.

Many of these newer barriers come from racing tracks — or at least they were first used at racing facilities — where the speeds are much higher than those normally associated with street and highway driving.

The current rage for racing tracks is tire barriers: Walls built from old tires. There's also a trend toward putting gravel in runoff areas to form traps to slow off-course vehicles.

Temporary racing facilities are constructed in the downtown portions of major metropolitan areas with large sections of concrete walls that are hauled into place. Similar concrete sections are also used on highways when a temporary barrier is needed. For example, around construction sites.

A problem with many barriers is that they can cause severe damage to the errant vehicle and its occupants.

Now, along comes Mickey Thompson and his stadium-style Off-Road Championship Gran Prix complete with lightweight, portable barriers that may well provide the ultimate in safety.

Mickey Thompson Advance Engineering spent five years researching and developing the patented M/T Hydro-Barricade. The individual units are fiberglass filled and made of a cross-linked polyethylene material recently developed by Dupont of Canada.

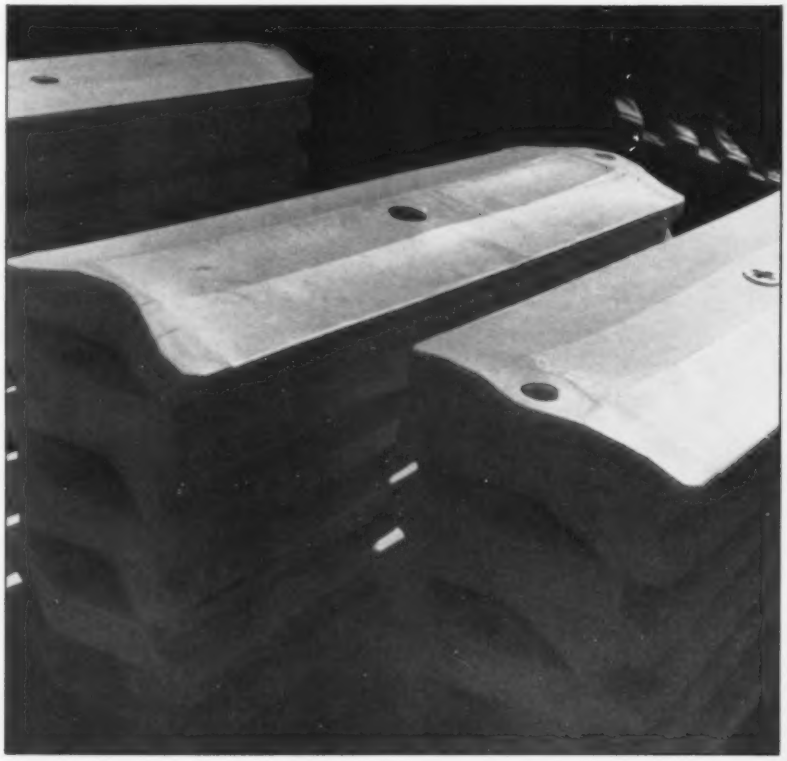
Weighing less than 100 pounds, M/T Hydro-Barricades are easily transported and require no special heavy equipment for set-up and placement. Their concrete counterparts' weight is measured in tons.

Once in position, the M/T Hydro-Barricades are filled to meet specific density and energy absorption requirements. In addition, the unique corner sections and inter-lockable couplings allow them to be placed and secured to almost any desired configuration.

While the Hydro-Barricades perform the same basic function of concrete walls, they do it without destroying vehicles that hit them. In addition, their construction is such that impacting vehicles do not want to climb over the barrier or bounce back into traffic.

Some future plans for the barriers in-

continued



(above)
The M/T Hydro-Barricades weigh less than 100 pounds, and unlike their concrete counterparts, are easily transported, requiring no special heavy equipment for set-up and placement.

(right)
Racing is the proving grounds for many automotive developments including barriers such as these employed in Mickey Thompson's Off-Road Championship Gran Prix series.

SPARK PLUGS
MICHELITES
9
TOYOTA
TOYOTA
TOYOTA
Curt LeDuc

clude pressurizing the contents so that fire fighting equipment may be attached.

Developed to meet the high safety standards of motorsports competition, the M/T Hydro-Barricade also has applications in construction site safety, temporary security fencing, crowd control and traffic direction as well as a variety of other uses.

(left)
The unique corner sections allow these barriers to be placed and secured to almost any desired configuration.

(above)
Once positioned and interlocked, these barriers are filled with water to meet the specific density and energy absorption requirements.

(below)
The M/T Hydro-Barricades' ability to stop a vehicle without doing serious damage to the vehicle or its occupant can be seen in these photographs.

Motorcyclists Warned Of Hypothermia

by Sgt. Mike House
Minot AFB, N.D.

With spring approaching, motorcyclists should think about the dangers of hypothermia or accidental loss of body heat. Because of their exposure to cool temperatures, rain and wind, motorcyclists are more prone to hypothermia than almost any other outdoor sports enthusiasts.

One of the contributors to this serious problem is that people don't realize most cases of hypothermia occur between 32 degrees and 50 degrees. Even 60 degrees is cool enough to produce serious heat loss, because the wind chill factor drives the relative air temperature down to or below freezing.

It is extremely important to keep your clothes dry while riding. Wet clothes will lose 90 percent of their insulating value and can allow body heat to be lost 240 times faster than the same clothes when dry, because the evaporation factor drives the surface temperature of the clothes and skin down.

Combine these factors with long periods of inactivity while riding and you're a good candidate for a serious case of hypothermia.

Some of the effects of body heat loss are intense shivering, fatigue, careless attitude or loss of ability to think clearly, dulling of the senses and numbness. With these things happening, hypothermia can be both very uncomfortable and dangerous to the motorcyclist.

How do you keep from becoming a victim? The best solution is to be prepared. Always dress warmly while riding. If you layer your clothing you can ride comfortably in the cool mornings, then remove some of your outer clothing as the temperature rises later in the day. An evening cruise home would require wearing your morning clothes again. Adequate rain gear is good insurance against wet clothes combining with wind chill and getting you into real trouble. Some other tips to prevent body heat loss — keep your head covered, don't keep traveling when you're tired, and carry some sugary food or something warm to drink. Also try to stop and stretch or exercise regularly.

If you recognize symptoms in yourself or your riding partners, stop as soon as you can and get into a warm place. Unless the hypothermia is very slight, your body can't produce enough heat to raise its own temperature to normal. Additional heat is needed. Minimize movement to prevent using up needed energy. If your clothes are wet, change to dry ones immediately to prevent further heat and energy loss. Warm drinks will help bring your body temperature back to normal but avoid alcohol. Alcohol is a depressant and will only contribute to the problem.

Remember, hypothermia is extremely dangerous and has been called "The killer of the unprepared." Carry extra clothing and rain gear and use it *before* body heat loss starts. The best way to prevent hypothermia is with the proper combination of preparation, clothing, food and exercise. By using caution and common sense you can stay warm and comfortable whenever you ride.

by LCDR Rob Robertson, USN
VAQ-137

Man! It's just one of those days when everything is perfect. Friday afternoon on an absolutely pristine Northwest day. The morning started out with a quick finish to some loose paperwork, followed by a scheduled instrument flight brief. The weather provided all the ammunition needed — clear with unrestricted visibility — to convince operations that maybe a low level route was in order and save the instrument work for the typical 3000' overcast four miles and rain that so often prevails in the area.

Following a thorough brief and preflight we launched to fly our route over the most breathtaking landscape in the US of A. Rolling hills, deep canyons and ragged snow capped peaks provide the ultimate in low level training to be found anywhere in Naval Aviation. This is what the Navy trained me for, to fly their most sophisticated, high performance aircraft in any weather, but more amazing is that on days like this, they even pay me for it!

Well the flight is over now, my day is done, the weekend is looming and my feet barely touch the ground from the satisfaction of the day and the things to come. Time now for a quick beer at the club with squadron mates, then home. It's going to be a great weekend. The kids have been excited all week about taking to the mountains to enjoy some of the recent good weather, camping and being out-of-doors.

A final check that no new fires need extinguishing at the office, and out the door. There it sits in the parking lot, waiting. Sleek, black and powerful. Seven hundred fifty cubic centimeters, 92 horsepower mounted on two wheels eager to be on the road. Although I've been riding motorcycles since my early teens, I still get excited every time I climb on one. I guess once you get the bug for a bike, it never lets go. I've always been an extremely careful rider, taking whatever precautions necessary to keep from coming in contact with the road, or another vehicle, but the thrill of riding is always there.

A short ride to the club and I'm soon laughing and scratching with my friends, sipping a cool one, talking over the week gone by. One hour, and three beers later, I'm heading back to the parking lot, still feeling great and ready to get home. I know better than to ride my bike, or drive a car, after drinking, but a couple of beers doesn't hurt anything. Helmet on and secure, always safety conscious, I sling a leg over and start it up. That low growl is music to my ears, bespeaking power and speed, ready, at my fingertips.

Riding slowly through the base, out the gate, and onto the road home the euphoria of a day gone well and anticipation of the days ahead grips hard. What a great life, the head of the world's greatest family, a "Sierra Hotel" Naval Aviator, and a nice bike to ride too! The rural roads surrounding the NAS are almost deserted by this time, and I know every curve and chuckhole from riding them daily. Almost without conscious thought I twist the throttle grip, feeling the acceleration, reveling in it, and applying more. Every nerve in my body is focused in on my machine and the road ahead. I'm perfectly in tune with both as I race forward. Whoever said even one beer can slow down thought processes was nuts. I can feel every stroke of the engine and every small bump in the road. Boy, I'm really moving now and these backroads are made for moving with a motorcycle through the curves, like this one now. Just lean into the turn a little and add a little gas to keep it steady, then out the other side . . . Hey, Wait! Where is that car coming from on my side of the road? He's pulling out of that driveway. Nobody ever comes out of there. Both brakes now!! Too fast! No options. . .!!

What a perfect day, to be alive.

Timely Topics

CUTTING AUTO INSURANCE COSTS

The key to reducing auto insurance costs is getting back to the basics, says the Automotive Information Council (AIC). Select your auto insurance coverage to provide the maximum protection in case of catastrophic losses, while reducing coverage for losses you can afford yourself.

The first area to look at is increasing your collision coverage deductible. The higher the deductible, the lower the premium. Deductibles of $250 may make more sense than the $100 deductible common 10 years ago.

Consider dropping collision coverage entirely on an older car worth only a few hundred dollars. If you need extensive collision repairs and carry collision coverage, the insurance company will only pay up to the car's "book value."

Consumers shopping for a new car should take into consideration the models that have lower insurance rates. Insurance companies set auto insurance rates based on the size of the average collision loss claim and the car's safety record. In general, they decrease premiums on large, safe cars and raise premiums on smaller cars that fare worse in auto accidents.

While shopping for lower insurance costs take into account value as well as price. Talk to friends about their insurance claim experiences. A company noted for slow handling of insurance claims is no bargain. When getting estimates, reminds AIC, make sure all quotes are for the same coverage.

WITH CARBURETORS CLEANLINESS COUNTS

As with many finely machined parts of a car, the carburetor is highly vulnerable to dirt. The fuel filter is designed to trap most contaminants that are washed through the fuel system including grit, rust and scale. When the fuel filter becomes overloaded with dirt, however, fuel flow is restricted. The engine stumbles and stalls. If dirt manages to get past the fuel filter it can become lodged in the needle valve and seat assembly. This causes flooding or, sometimes, a lean condition due to a sticking carburetor float.

At that point, says the Car Care Council, it is wise to have the car serviced.

Dirt that finds its way into the fuel bowl of the carburetor can clog main jets, metering rods, and a number of other components in the carburetor. A clogged main jet will upset the air/fuel balance of the engine.

Normal wear will affect carburetor performance, too. The accelerator pump is a case in point. This is a plunger that provides extra fuel when the gas pedal is depressed. The neoprene ring eventually wears, causing the engine to hesitate under even light acceleration. Carburetor service and replacement of the pump should correct the problem.

Finally, a major carburetor component is the choke. When the engine is cold, the choke plate should be closed so the carburetor can deliver an extra rich fuel/air mixture. As the engine warms up, the choke plate slowly opens so the engine receives the optimum fuel/air mixture.

If the choke fails to open, particularly in cold weather, it will cause hard starting problems due to a lean condition. Pumping the accelerator to feed more gas into the cylinders will only aggravate the problem by causing the cylinders to flood. This causes the spark plugs to become wet with raw gas, making it almost impossible to start the car.

Adjustment of the choke or replacement of worn parts will correct the problem.

FOCUS ON CHILD SEATS

Secretary of Transportation Elizabeth Hanford Dole recently urged adults to focus their attention on the proper installation and use of child safety seats.

"All 50 states and the District of Columbia now have child passenger protection laws requiring the use of child safety seats and belt systems," Secretary Dole said. "But good laws are not enough. These child safety devices must be used on every trip and they must be used correctly."

Improper installation of safety seats continues to be a problem. According to a 19-city survey by DOT's National Highway Traffic Safety Administration, an estimated 36 percent of child safety seats are installed incorrectly.

Misuse of the child seat after installation is also a problem. For example, the harness, shield, or safety belt that is needed to secure a child in a seat is frequently fastened improperly or not used at all.

NHTSA's survey also found that child safety seat usage is currently about 56 percent, up dramatically from 27 percent at the end of 1983.

SMALL CAR COOLING SYSTEMS WORK HARDER

Owners of newer, smaller cars who are preparing their cars' cooling systems for summer driving should "bone up" on the subject before proceeding, says Car Care Council. These engines produce up to 20% more heat than did their bigger, easier working predecessors. In some cases, they have aluminum heads and/or blocks instead of heavier cast iron, therefore requiring new antifreeze coolant mixtures compatible with these metals.

The Council recommends a seasonal flush and refill of antifreeze/coolant to retain the system's maximum efficiency and to prolong the life of the radiator and other parts.

High under-the-hood temperatures associated with the new cars causes rubber components to deteriorate more quickly than on earlier models. Therefore a careful check of all hoses for rotting, cracking or leaks is essential. (Caution! Do not check hoses when the engine is hot. A weak hose could fail, releasing scalding fluid!)

Whether or not the car is equipped with a belt driven radiator fan, all belts should be inspected as part of the cooling system checkup. Not only the condition of the belt but also the tension is critical. Too loose a belt will slip, permitting malfunction of the driven components (alternator, air conditioner compressor, fan, power steering and others). Also, a slipping belt gets hot, thus accelerating wear and deterioration of the belt.

Life expectancy of belts and hoses, like most components, varies from car to car, driver to driver. Most belts are replaced only when they are at/or near failure, according to the engineers of Automotive Cooling System Institute, with potentially serious damage to the car. For this reason, recommended replacement interval for preventive maintenance is about four years.

Include the radiator pressure cap in your inspection. Remove it (when the engine is cool) and check the seal for breaks or cracks, which would indicate the need for replacement. The cap also should be checked with a pressure tester to be sure it still can hold the pressure specified for that engine. Most service shops are equipped with pressure testers, which also can be used to locate leaks in the cooling system under pressure.

Backfire LETTERS TO THE EDITORS

SAFEST BIKERS ARE "GANG" TYPES

To add a little more fuel to the fire, I would like to throw in my support for the comments of Lt. Cmdr. Knutson (Nov 85) on motorcycle drivers and the responsibility to obey the laws — and make a few observations.

The laws and the layout of the road lanes exist because of the realities of the traffic conditions today. The maverick driver who ignores these laws, and the fact he is a part of a mass of moving machinery, is not only a lawbreaker, he is just plain stupid. The bikers who pull stunts like shoulder riding, weaving, and speeding may "leave the crowd behind" for a while, but someone is going to have to scrape them up off the asphalt sooner or later.

What amazes me is the *high percentage* of military bikers I see just going to work break the laws and take chances. Despite all of the safety briefings and the mandatory motorcycle courses for the troops, the majority of military bikers I see are consistently riding on the edge of an accident. And when the accidents do occur, we sit in staff meetings and bemoan the bad safety statistics. Worse, we often try to explain away the biker's accident on weather, or that the car driver "didn't see him" and pulled in front of the poor bike rider. I know this happens — it happened to me when I rode — but in most every case the real story is that the biker was traveling at a different (faster) rate of speed than the other vehicles and lane weaving when his luck finally ran out. It is just unrealistic to expect the average car or truck driver to always see and avoid the bikers zipping in and out of traffic.

Interestingly some of the safest bikes seen on the road today are the scruffy, laid back, "gang" types, who seem to have more respect for the dangers of the highway, and the traffic laws, than our average airman going to work at 7:15 in the morning. These guys may not look very respectable, and certainly don't always follow the rules about wearing helmets, but as far as road smarts they put our military types to shame — and mile for mile, their survival record is better. Maybe we should have these clubs come in and explain a few facts of the road to our guys. Of course that won't happen, but we need to do something — the current programs are not getting through to our people.

Lt. Col. Robert L. Brown, USAF
Sumter SC 29150

KEPT FROM KISSING WINDSHIELD

Last march, while stationed at F.E. Warren AFB, WY, I was driving through downtown Cheyenne on an errand. The day before, six inches of snow had fallen, but the Wyoming and Colorado road condition hot lines stated major routes were all clear.

After finishing my errand, I decided to take Interstate 80 to I-25 enroute to Denver. As I headed west on I-80, I encountered some wind gulfs and drifting snow so I reduced my speed to 45 mph.

Before I knew it, a mysterious translucent substance overwhelmed my vehicle.

I switched lanes, only to find more of the slippery surface — black ice! My vehicle was out of control and it followed its own path, switching lanes three times in 40 yards. With each change of direction, centrifugal force and momentum shifted my body back and forth. My seat restraints kept me stationary as I regained partial control.

Finally the vehicle headed onto the declining median and impacted a guardrail at a 10 degree angle. My belts held me secure.

The few seconds of this wild journey seemed like minutes, until my vehicle came to an abrupt $2,000 stop. But the most important detail was that I walked away without a scratch.

The bottom line is that road condition reports are indicators of the road condition in general but surprises should always be anticipated. As far as the role safety belts play, enough cannot be said. They have certainly kept a lot of folks from kissing windshields.

Capt. Robert L. Young, USAF
Lowry AFB CO 80230

WHEN IN DOUBT, ASK

In your article, "The Drug Primer" (November 1985), you referred the decision of taking medications and driving to doctors no less than five times. Realistically, how often does a prescriber warn the patient about taking a particular medication and driving? From my experience and that of others, not often.

Not once in the entire article did the author even mention the best source of information — a *pharmacist!* Perhaps the author was not aware of the extensive knowledge of drugs that a pharmacist possesses. As a pharmacist, counseling patients on taking medications is a very important part of my job, not to mention part of my professional responsibility. Any time they pick up a medication — prescription or over-the-counter — that can cause drowsiness, with the accompanying diminution of driving skills, I make sure they are aware of this.

Patient counseling is akin to the wearing of safety belts — it only takes a few seconds, but it could save someone injury or loss of life.

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Yes, a pharmacist is a good source of that information, and we should have mentioned the fact. However, nobody here has ever heard a pharmacist volunteer such advice, so you may be one of the few. The important part of our caution can be summed up "When in doubt, ask."

DECISIONS MIGHT SAVE YOUR LIFE

The 7th of February 1985 was a dark and gloomy morning in northwest Florida. I was traveling to work on my trusty motorcycle. The highway was very familiar to me since I traveled it every day. Weather conditions were good with dry pavement, no fog or rain for the past 24 hours and a slightly overcast sky. The temperature was 52 degrees fahrenheit. The road was a four-lane divided state highway.

I was aware that the road surface was uneven in some places since repaving was in progress but no signs had been posted. The new surface had been laid on the left lane but only the undersurface had been completed on the right lane, leaving a

two-inch difference in road height at the lane dividing line. No problem, I just wouldn't change lanes.

I was traveling at 55 mph and had gone about three miles when my front tire hit something (I never learned what) and threw the bike into the lip between the two lanes. When the front tire hit the lip it peeled off the rim, causing an uncontrollable front end shimmy.

My decision was VERY apparent. I had to leave the motorcycle. Remembering my training (motorcycle safety course and recent refresher) and given my 20 years experience on motorcycles, I pushed away from the bike and tucked in my arms in anticipation of the roll that would follow. I hit the road on my left side and, after what seemed like an eternity, I hit again. The urge to extend my arms to stop what felt like the end of the end of the roll was almost too much, but I overcame it and held the tuck. At that point I started rolling very fast (the first two hits were my body bouncing down the highway). I came to rest on the pavement 125 feet later and about five feet behind the bike, which was still running.

The first thing I did was to check myself for injuries. After determining that there were no major ones, I got up and turned off the motorcycle. A passing motorist (the first) stopped and assisted me in moving the bike off the highway (but not before another motorist ran over what was left of my front wheel). A second motorist radioed for the Highway Patrol. Disorientation on my part was apparent to the others but not to me until I became reoriented and realized just how confused I had been about direction.

I was checked at the base hospital and the only injury sustained was minor road rash to both knees and a bruised elbow (I had been wearing heavy protective pants and jacket). Believe it or not the motorcycle only received $27.50 worth of damage.

I was very lucky. I had listened during my training and it had paid off! The biggest lesson I learned from this was the fact that you can't possibly know what it feels like or how you will react in any situation until you have been there. All you can do is train well for it.

The mind goes into an ultra-high-speed thought and decision-making process during times of distress. If you have listened and learned during your training, you will be able to make the decisions that will minimize your injuries. Those decisions might well be the ones that will save your life!

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ONE WIPER OR TWO?

After reading your article on "Preparation: Planning Wins Over the Long Haul," I need to question the validity of the statement on windshield wipers where you state "the law requires that you have two serviceable windshield wipers and blades." The above article appeared in your November 1985 issue.

Starting in 1985, Mercedes-Benz introduced a single wiper designed to cover more of the windshield than two blades currently do. I plan to import this car and was wondering if this will be a modification that I will encounter. If Mercedes does it now, I can see other models adopting it in the future.

Patrick John Crilly
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We have seen Mercedes on the road with the one-wiper system, so we're sure no modification is required. However, make sure the model you want is meant for import; some are not.

THANK YOU VERY MUCH

With the seat belt law coming into effect here on the Islands, I guess it is timely to relate an "incident" that occurred to me a few months ago.

After one of those long days at work, I stopped at a friend's house to swap sea stories about the "old" HSL-37 that we both remembered and what I was being transferred back to.

Three hours, two bowls of good chili and some bad TV shows later, it was time to go home. I got into my car and buckled up. A mile or so down the road doing 40 mph (35 zone), I leaned over to adjust my radio.

The next thing I remember was sitting up looking at the hood of my car all mangled up and the dashboard lying in the passenger seat. There were people trying to get the door open and my vision was being blurred by something warm and sticky.

My next recollection is lying in the street looking up at all these flashing lights while paramedics were putting a neck brace on me. The view from under an oxygen mask isn't very good. Then finally I woke up, fully conscious, on an emergency room operating table just in time to hear the doctor say, "This is going to hurt a little bit." It sure did.

While fooling with my radio, not watching the road, I had veered off the lane and hit a parked '74 International Travel-all with my '76 Ranchero at about 40 mph. Those are both pretty good sized American-built cars, with real steel bodies, you know? Remember gas-guzzlers? Well they are both piles of scrap now. My insurance was paid up, thank you very much.

I was convicted of "Dry Reckless Driving" (No DUI, thank you very much); a $350 fine. I also gave a lawyer $425 to represent me. He said, "Thank you very much."

I've always been pretty good about wearing my seat belts and I used to good-naturedly rib my wife when she would not buckle up. She'd usually say "Ok, Ok!" and strap in. It's funny, but since she saw the wrecks in the junkyard she has taken up the seat belt habit with nearly a religious fervor.

I truly believe, deep inside where the little voice is, that I'd be dead today if I hadn't been belted in that night. As it is, I received a bruise on each hip from the lap belt, and a scar right between the running lights from tagging the steering wheel. If I had not been leaning over, the shoulder belt would have caught earlier. Of course, if I hadn't been leaning over, it never would have happened in the first place.

Anyway, I'm alive today and my wife and I are a bit wiser. Thank you very much.

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A Tale of Two Accidents

by Lt. Robert A. Cook, USN
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I was recently involved in two bicycle accidents. Base and unit safety officers should seriously consider the following when they develop future safety awareness programs.

Time:	0645	2030
Speed at Impact	23-28 MPH	4-6 MPH
Description	Ran head on into the back of a parked van at full speed	Bike slipped down while entering a driveway, rider fell forward over handlebars and hit his forehead.
Cause	Forced over by traffic	Unknown
Injuries	Headache, strained back	Concussion with resulting seizure, unconscious 30 hours, 2 crushed vertebrae, skull fracture above right eye, assorted cuts and bruises, 7 stitches
Damage to the bicycle	Crushed front fork, crankset, top tube, and head tube; bent front rim	None
Hospital stay	1 hour at sickcall	4 days in intensive care, 10 days total
Medical bills	2 x-rays (unknown)	$9800 (Civilian hospitals and ambulances) plus Naval hospital follow-up EEG's X-rays, and CAT Scans for Medical Board
Lost time from duties	1 day	24 days (hospital and recovery time) plus 5 days for follow-up exams and Medical Boards, 6 months limited duty (no flying nor driving)

What was the difference between the accidents? I was wearing a $29 bicycle helmet the first time. I wish I had been wearing it the second time.